The Orchadian

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Official Journal of the Australasian Native Orchid Society Inc.

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Dendrobium kingianum 'Queen's Jewels' AM/ANOS 2016 (VIC), AM/AOC 2012 (VIC)
Photo Peter Adams

The Orchadian

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Weekend	Monday	Tuesday	Wednesday	Thursday	Friday
1st Week		Townsville		Beenleigh	Toowoomba Victoria
2nd Week	Western Australia	Illawarra Kabi	Central Coast Geelong	Mackay & District	
Far North Coast (3rd Saturday)	3rd Week	Warringah		Macarthur & District	Sydney
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Editorial

About 30 years ago *The Orchadian* received articles from experienced orchid growers and people working in the field professionally or as keen amateurs. In 1985 the editor, J.J. Betts, reflected on the balance of articles and equated botanical contributions with discovery and naming of new orchid species, which was the case up until that time. Of the writers mentioned only one is still writing for the journal.

Orchid science has largely shifted focus to ecology, evolution, effects of climate change, pollinator biology and its application to conservation. These areas warrant more support from funding agencies to conserve diminishing habitat and promote recovery projects with reintroduction of some threatened species. *The Orchadian* welcomes articles about these fields, and how readers may assist in projects with monitoring and practical advice in growing certain species. Submissions of reports of new taxa are welcome. All major articles in *The Orchadian* are formally peer reviewed to achieve the best result.

The content of *The Orchadian* reflects the contributions spontaneously offered and others invited from people prepared to write on a topic. The balance between different interest areas is maximised over each year but individual issues may focus on particular subjects if material arrives as it did for this issue. Three articles were received for *Dendrobium kingianum*, which has received little attention in recent years, and two appear in this issue. Since the first wave of breeding this species, there has been a mythology arise with some historical events and breeding objectives confused, and the main focus portrayed as a search for the deepest purple flowers - that is far from reality. Accurate accounts in this issue are from people involved closely in the initial programmes of line breeding, which are still continuing. Harry Klose, a key member of the Hastings River Kingianum Growers Group in the 1970s and 80s, describes the early history of breeding in the Port Macquarie area from the time of Bill and Jean Cannons. All of these people were influential and helpful in my own breeding program. There have been few articles on breeding programs of Australian orchids and little or no information on some key breeders of the past.

There have been requests from growers and some judge panel members to include comments on recent ANOS awards, and this has commenced in this issue. As a large number of awards occur in spring it is not possible to publish the photographs and comments all in one issue, and they will be spread over several issues. Judging panels have been requested to supply some comments, and growers may write focussing on the origins of the plant, special cultural details, and the particular features of the plant. This information provides an historical record of achievements and judging.

In this issue, experienced growers David Butler and Fred Fear each describe an outstanding cultural result. Sheryl Lawson writes of Reverend Dr. Ron Collins, a key figure in north Queensland orchidology, and his work in expeditions of discovery in Cape York. Roslyn Capell has an article on endangered hammer orchids.

The trends in growing Australian orchids have changed over the decades. There is still a varied approach to plant selection, but particular groups are in vogue e.g. new colourful *Sarcochilus* hybrids, sect. *Rhizobium* species and hybrids, and *Dendrobium speciosum*-style hybrids. As seen at the Kempsey ANOS Conference and Show, inter-varietal and intra-varietal crossings predominate over plants of natural origin. Some species and hybrids such as *D. kingianum*, *D. falcorostrum*, *Sarcochilus hartmannii*, *D.* Bardo Rose, and *D.* × *delicatum* were mainstays of the exhibition bench that are less often seen, at least in most parts of southern Australia. These are not lesser plants in their impact and ease of culture and it might be time to restore them to collections and the showbench.

On a practical note, *The Orchadian* is posted at the end of the month of issue, but it is currently not arriving by post for from two to four weeks. Presently we are not able to make changes to reduce the delay, and failure of arrival within this time frame does not mean that the issue is late or that the journal has been lost.

Peter Adams

President's Report

Our new website is now established, thanks to the very hardworking website team, and is being regularly updated so get on line and see what is there if you haven't already. A complete ANOS awards site and an Australian and Australasian hybrid list with many search options have now been transferred to the ANOS Inc. website.

We have a new secure online facility to streamline membership payments and this will reduce work for the treasurer. Reminders for renewals for 2017–8 are on your address page with this edition and again in the June edition so that members do not miss out on the September issue. The June edition is the last of your current subscription. Please contact our Membership Secretary David James via the website or through our post box if you have any questions or difficulties with renewals, and he will do his best to help you. Contact details for council members and for enquiries are on the website, please contact us with any questions or suggestions.

The cost of membership, which includes the quarterly journal *The Orchadian*, has not changed for the past ten years as we have not passed on rising production costs. At our recent ANOS Council meeting we reviewed our costs, particularly the huge rises in postage rates from Australia, and determined that the membership cost for 2017–8 will increase by $5 for Australian and New Zealand memberships, and $10 for the other categories. This is still below the actual cost of postage increases over the ten year period. Please also register online for our new e-newsletter with regular updates and information.

I have heard from a number of growers in New South Wales and Queensland who have been coping with extreme heat waves in February. It has been a challenging time. Some growers may like to share their experiences through *The Orchadian*. I spoke at Geelong ANOS Group in February, where there is a very active terrestrial interest group, and several members have now taken out individual ANOS memberships. Far North Coast and Townsville are two of the small groups that would welcome your support by visiting or offers to speak if you are travelling past.

I have been thinking about orchid judging and in particular the role of judges. As someone who has trained in both ANOS and AOC judging systems, and has judged overseas a number of times, I have had time to observe the process over many years. I have noticed that a good training system offers tremendous opportunities for personal development. Judges are expected to be able to communicate well (verbally and written) with each other and with orchid growers. I have seen student judges make great strides in their abilities as they undertake training. Being a judge involves ongoing learning, and a strong sense of curiosity and a drive to learn are important traits to be a good judge. An ability to deliver independent judging opinions in a calm and reasoned manner is vital.

I encourage all students and judges to continue their learning and be prepared to explain their decisions, as well as maintain flexibility to consider new ideas as new breeding trends emerge. Growers are always curious about judging decisions and will often ask a lot of questions. This is an opportunity for them to learn more about Australasian orchids. Publication of the awards with comments and articles by judges as to the qualities of the plants that have led to the judging decisions are part of our communication to members, and I encourage all judges and associates to be prepared to think and write about these things. Judging involves huge time commitments and financial expense, and I ask that members respect the efforts involved.

The prestigious Ira Butler Trophy awards, jointly administered by ANOS Inc. and the Orchid Society of New South Wales, are judged each February, too late this year to include in this issue. Congratulations to all winners, and we will have full details in the June issue. I encourage all growers to consider entering their plants for the awards if they have winners at the shows, and to check the website about eligibility requirements.

As the show season begins again I wish all members an enjoyable year of orchid growing, displaying and friendship, and I hope to see some of you at shows and meetings during the year.

Sheryl Lawson

Breeding *Dendrobium kingianum* and the Hastings River Orchid Society

Text by Harry Klose
harold.klose@bigpond.com
Photos by Peter Adams

The Hastings River Orchid Society was a strong Australian orchid growing group with outstanding show displays in the 1970s and 1980s, particularly of *Dendrobium kingianum* specimens, and held the 6th New South Wales Regional Conference at Wauchope. It gave rise to the Hastings Kingianum Growers Group (HKGG), a local group encouraged by Bill and Jean Cannons, pioneers of Australian orchid breeding.

I remember in the mid-1940s as a child of around eight my grandfather taking me out to the paddock and pointing out *Cymbidium canaliculatum* growing high up in a very tall iron bark tree. When I was at teacher's college in Sydney I had the opportunity to visit the OSNSW orchid show, which used to be held in the Sydney Town Hall. I was captivated at the show by a large pot of red *D. kingianum*, which I think was a champion of its section, but not of the show. I have always considered that it was a specimen of *D. kingianum* 'Corrigan's Red'.

Hastings River Orchid Society

Shortly after I settled at Wauchope, where I knew there was an orchid society meeting regularly, I was in town a few months but did not meet anyone who could invite me to the Hastings River Orchid Society. I did not wait for an invitation, located the secretary and suggested that I accompany him to a meeting. The society began in 1964 and Alan Garrett has been the treasurer from 1966 to the present. He helped promote the growing and exhibiting of *D. kingianum* over the years and has been the mainstay of the society.

I recognized Alwyn Flanagan at an orchid society meeting and introduced myself to him at the RSL Club where the community met for drinks on Friday evenings. In those days the Hastings River Orchid Society was quite large, and even though it was very sociable with a cuppa at the end of the meeting, there was insufficient time to talk with everyone. The orchid society was not quite what I expected, but it had some very interesting people with challenging ideas. There were a large number of growers who had excellent native orchid collections grown to horticultural perfection. Bill and Jean Cannons of Wayside Nursery, who were pioneers of Australian orchid breeding, were prominent members.

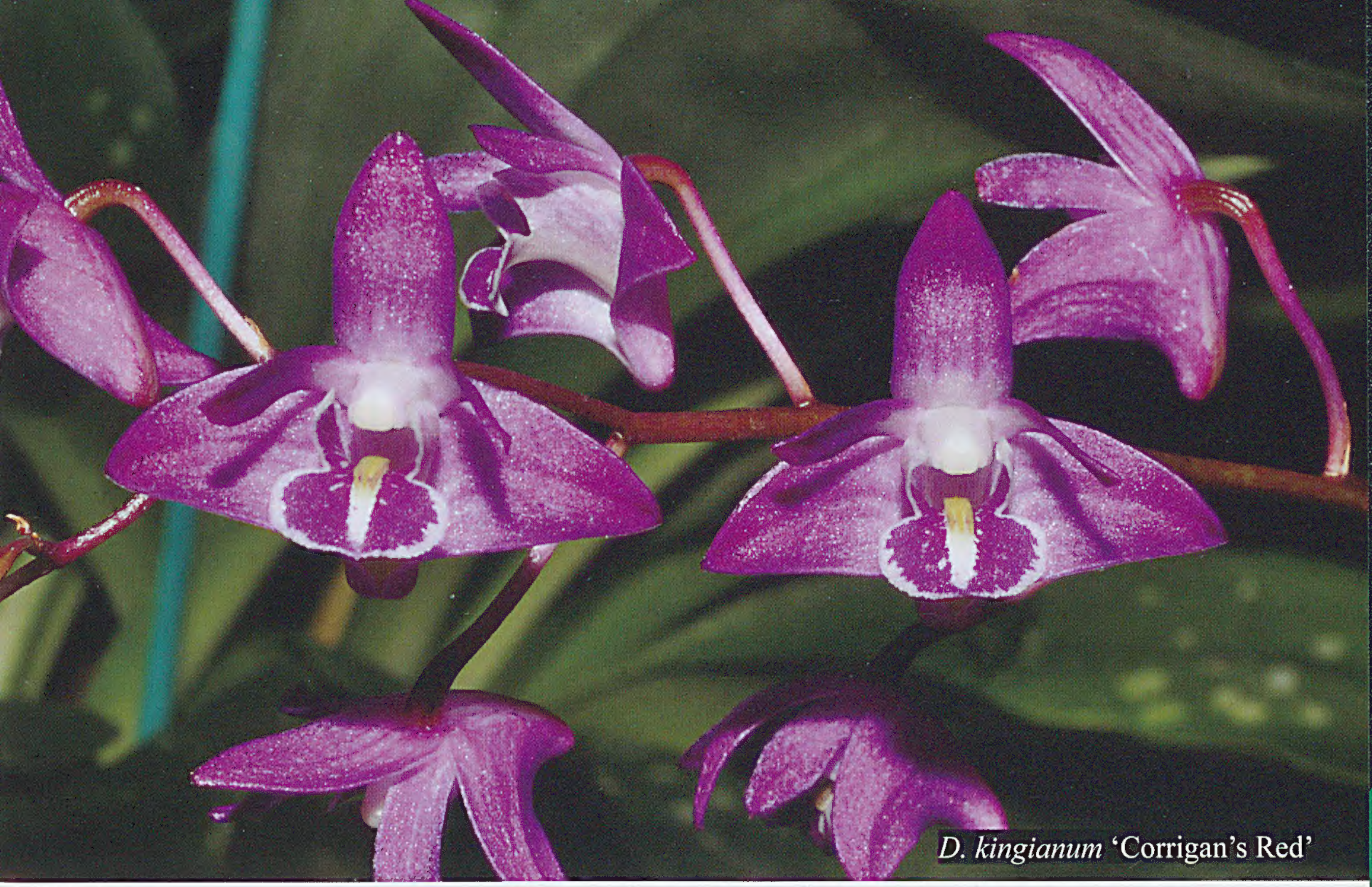
At this time Alwyn, Alan Garrett and I were in our early thirties. The Cannons were in their sixties and recognized that their time for breeding native orchids was limited. Then it was considered that it would take about 7 years for a *D. kingianum* to flower from seed, and double that for *D. speciosum*. Hybrids offered shorter periods, and the Cannons made native hybrids, as well as selling various hybrids on behalf of other breeders.

Dendrobium kingianum breeding

I remember Jean lecturing us younger growers that we needed to start early to make a go of breeding native orchids. We set about breeding *D. kingianum* to improve quality and presentation with a range of colours using plants from the bush and from the Cannons. Ted and Barbara Gregory, who were members of the Manning Society at Taree, knew exactly how to grow cymbidiums and at first had some qualms about whether much could be done to improve orchids from the bush. Rod Graham joined us and we formed an informal breeding group which was known as the Hastings Kingianum Growers Group, to focus on *D. kingianum* and other species in the region.

The Hastings River Orchid Society had developed a reputation for quality plants. The climate was well suited for easy cultivation and very successful flowering. Even plants of mediocre quality from the bush could be grown to specimen size very quickly.

In those years there were next to no conservation measures in place by. This early failure resulted in the loss of much of the natural orchid habitat. As the demand for native orchids became popular, city dwellers in the main (but not only) saw Australian orchids as an unlimited resource to be exploited for financial gain. I am aware of sites along the roadside around the Broken Bago Range where orchids grew in abundance. For years now those rocky sites are as bare as a badger's bottom.



D. kingianum 'Corrigan's Red'

As native orchid growers increased in volume and output in the society, and with the proddings of Wayside Nursery, Alwyn Flanagan and I were voted into leading roles in the society. This resulted in the redrafting of the show schedule with a bias towards Australian orchids and their hybrids. Colour classes were set up for *D. kingianum*, which was generally pink (mauve) with shades from pale through to dark. There were whites, and several red (technically purple) plants, of which 'Corrigan's Red' was widespread in collections.

Whites were not usually pure white, and Wayside's attempts to breed a pure white resulted in more very pale mauves, which told us something of the genetics limits to obtain white. A bright and strong red was also considered very desirable. Alwyn had several very small plants which would not cross with 'Corrigan's Red'. The other desirable traits required were increased floral size and raceme strength to improve display.

There was much discussion between people, especially between Alwyn, Alan Garrett and myself. I demanded a scientific approach, and that records be kept, as it was just as important to record failures. One cannot incorporate all desirable traits in one crossing. I presented our breeding program and initial results at the 6th Regional New South Wales Conference at Wauchope (Klose 1981).

Immediately the new show schedule took effect, one small red *D. kingianum* exhibited was evidently different from the others, not in the daytime, but under fluorescent light. 'Corrigan's Red' did not show this shade. Alwyn and I cross pollinated plants with similar properties. We also tried crossing with 'Corrigan's Red' without success on many occasions. Some viable seed pods resulted and were sent to the laboratory for flasking in 1976.

When the flasks returned I shared some with Alwyn and Alan. I remember telling Ted Gregory what we were doing, and in his usual form he told us we were wasting our time and money and would probably be getting the pension before we got any results from our first crosses. So Ted continued "They will be all pink like all the other attempts, or they will be sterile and impossible to continue breeding". I did not argue or make any comment to the others, and contributed the finances to cover more flasking.

A fair percentage of the results were red, from memory about one third of the seedlings. There were only three reds in the first season. I had long planned if any of the progeny were to flower

pure red then I would name them after leading communists of the Soviet Union. So this is how 'Karl Marx', 'Lenin', 'Trotsky', 'Stalin' and others earned their names. One was called 'Breshnev' and died prematurely, just like the Soviet President. It did not take long for Ted Gregory to take note of our results and to start a similar breeding program, especially when they took on a nursery business on Tamborine Mountain. Alwyn wrote notes on our breeding program and results (Flanagan 1992).

Very early on I realised that many kingianums appeared to be sterile. I considered the possibility that plants could exist as diploids, triploids or tetraploids, and that mixing them would be difficult. On examining the pollination and germination failures after several years I was able to divide the *D. kingianum* into three groups. Provided you matched plants within each group, plants were not sterile as originally supposed.

Peter Adams and Sheryl Lawson were introduced to our program following their attendance at the Regional Orchid Conference held in Wauchope in 1981. They became real enthusiasts of *D. kingianum* and travelled widely within its natural growing range. They visited collectors and examined many plants. They performed chromosome counts on plants, and when those results were compared, groups were found to be different ploidies (Adams 1992). The results confirmed that the red plants we were using were triploids, and it was a possible reason why some crossings failed.

Dendrobium speciosum

About the same time I was more interested than the others in taking up the new challenge of breeding *D. speciosum*. It was easier and longer and the start of an era. I set seed to a number of very desirable plants. Alwyn contributed, and grew on some of the seedlings. He flowered some nice seedlings within seven years out of flask. One of the best, a crossing between plants from Eungella (*D. speciosum* var. *curvicaule*) and Watagan (*D. speciosum* var. *speciosum*), he named 'Desert Head'. This referred to me, as I have a landing strip for flies to come to rest. Peter and Sheryl named an awarded Eungella plant after me - *Dendrobium speciosum* var. *curvicaule* 'Harry Klose' AM/OSCOV.

Harry Klose is past president of Hastings River Orchid Society and a pioneer of *D. kingianum* and *D. speciosum* breeding.

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Line Breeding *Dendrobium kingianum* Bidw. -A Review and Outcomes of a 30 Year Program

Photographs and text by Peter Adams
gallangowan@optusnet.com.au

Summary

Dendrobium kingianum is a compact species very suitable for specialist and general Australian orchid growers. After a period of active breeding in the late 20th century, breeding, growing and exhibiting have declined despite many quality awards and three special awards for breeding. The time to producing crosses with consistently improved plants has been longer than expected, taking 20–25 years, and is most successful for mauve and splash purple flowers, and for solid purple labellums. Other colour lines have been difficult to improve. Our breeding has reached six generations with many unsuccessful crosses, but some good results in most colour lines, notably mauve and purple splash petal flowers, which have the most and highest quality awards.

Introduction

What happened to the vogue of the 1980s and 1990s for growing and breeding *D. kingianum*, one of the most attractive, compact and variable Australian species? There were specialist collections of colour forms, and enthusiastic groups and individuals aiming to improve quality and colour with breeding. Since then there has been a decline in plants exhibited or listed for sale in catalogues. There are few examples of line breeding over more than 3–4 generations.

Early breeding involved a wide range of colours with some improvements in pastel and mauve colours. In the early 1990s many breeders concentrated on attempts to produce the darkest purple flowers possible. A few exceptional plants were produced, but there were difficulties in breeding and culture. The most successful and exciting developments and most awards have come from mauve and splash tepal flowers (Table 1).

In the natural habitat southern plants are short with low flower counts, graduating to tall plants in the north with higher flower counts, star shaped flowers and frequent aerial growths. Plants from Gloucester in the southern part of the range are short to moderately tall. The line breeding of *D. kingianum* has almost exclusively used plants from the southern part of the range as they have higher quality flowers and stronger upright racemes on more compact plants. Flower counts are usually 4–8 per raceme and this is reflected in the breeding results.

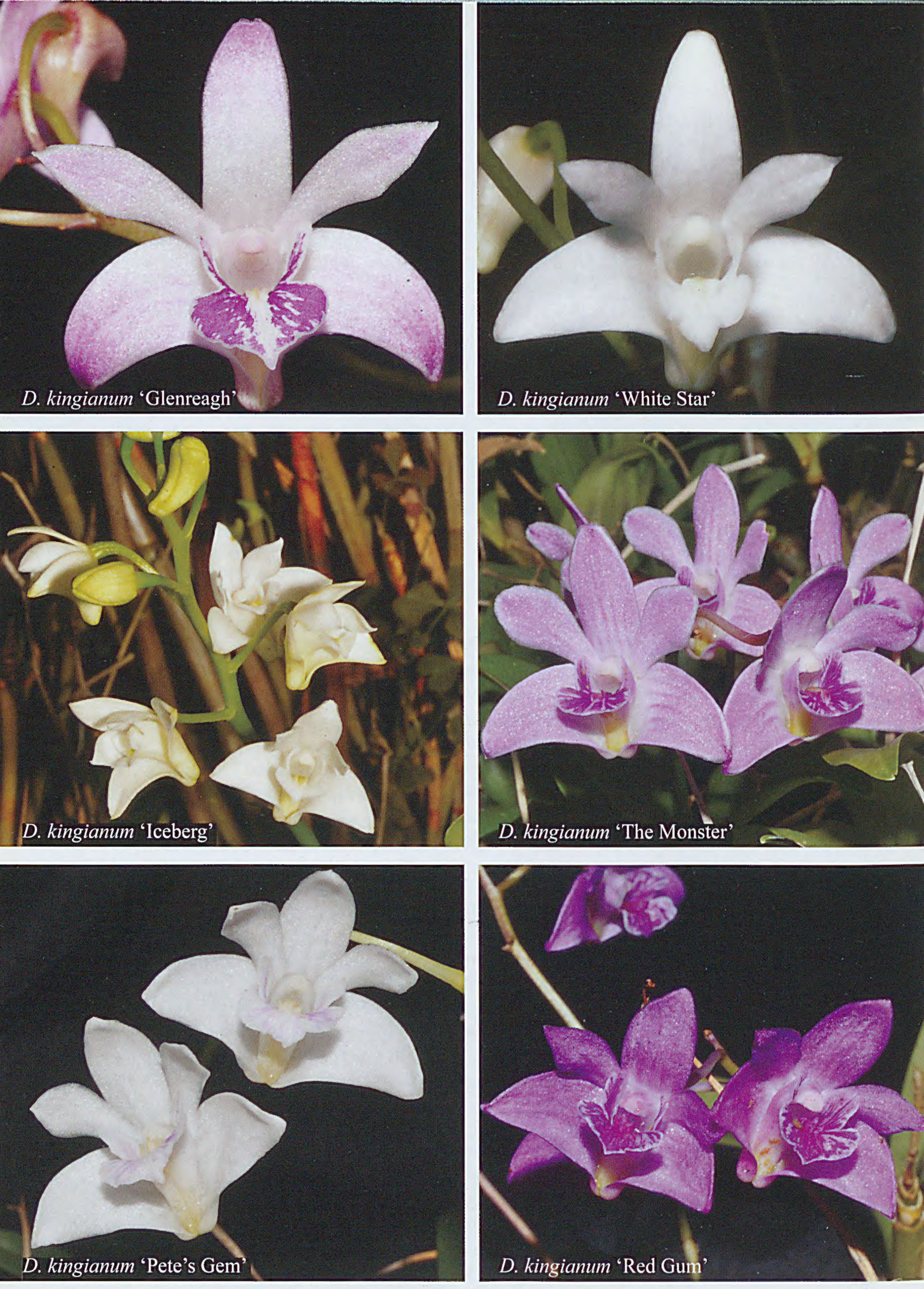
Naturally occurring plants are all attractive in their own right, and from a judging perspective may be improved, but the process has been slower than initially expected. It is difficult to explain why *D. kingianum* is out of fashion despite breeding successes and numerous quality awards. It is now rare to see more than a few plants at shows, or to see a specialist collection.

I review the history of *D. kingianum* breeding, starting with Bill and Jean Cannons in the 1960s and present an account of our own line breeding program which began in 1987. The analysis offers some insights into the decline in popularity of the species. The modern trend is focussed on *D. speciosum* line breeding and hybrids. These are slower to grow and flower and develop into quite large plants that can be difficult to manage. I speak from personal experience, having grown and bred many different types of such plants. There may be a revival of *D. kingianum* interest and growing, and of its smaller and faster growing hybrids. It is the growers who have changed; the plants are still available with improvements in the species.

The Species

The exact location of John Bidwell's original collection, sent to Lindley in London, is uncertain. The description is consistent with a plant from the southern part of the range. The expansion of the Australian Agricultural Company opened up many areas where *D. kingianum* could be seen growing on rocky outcrops north of Bulahdelah, and the specimen is likely to have been collected in that region.

In the late 19th and early 20th century the wide variation in plant form and flower colour was recognised by F.M. Bailey and others who described a number of varieties: var. *pallidum* Bailey (1884), var. *silcockii* Bailey (1902), var.



D. kingianum 'Glenreagh'

D. kingianum 'White Star'

D. kingianum 'Iceberg'

D. kingianum 'The Monster'

D. kingianum 'Pete's Gem'

D. kingianum 'Red Gum'

Early parents of *D. kingianum* line breeding

aldersoniae Bailey (1905) and var. *album* Williams (1887) (an example of *D.* × *delicatum*). Rupp in 1943 described diminutive plants with relatively large flowers from the Upper Hastings River as *D. kingianum* var. *pulcherrimum*. All these forms are now known to be scattered findings not warranting varietal status.

The wiry, partly underground, aerialising plants at isolated sites in central western Queensland (e.g. Carnarvon Gorge, Robinson Gorge) were described as *D. kingianum* subsp. *carnarvonense* P.B. Adams (Adams & Lawson 1995). Clements and Jones (2002) proposed splitting *D. kingianum* into three species under the genus *Thelychiton*, as *Thelychiton kingianus*, *Thelychiton pulcherrimum* and *Thelychiton carnarvonense*. This new genus has not been accepted (Pridgeon et al 2014).

Recent morphological and molecular studies of plants from the full distribution range support a single species *D. kingianum*, with two subspecies: *Dendrobium kingianum* subsp. *kingianum* occurring along the eastern coast and the disjunct *D. kingianum* subsp. *carnarvonense* in central west Queensland.

Distribution

Dendrobium kingianum is an Australian endemic species generally accepted to occur from just north of the Hunter River near Newcastle, New South Wales (32°30'S) to the central Queensland highlands on the Tropic of Capricorn (23°26'S). The western limit follows the New England Highway in northern New South Wales and southern Queensland. There are unconfirmed reports north and south of these limits, and some of these may represent relocations or planting out of collections to the bush. We and others have investigated reports of sightings on the Blackdown Tableland and at Kroombit Tops (Batianoff & Dillewaard 1988) but have not found plants.

Historical Overview of Breeding Programs

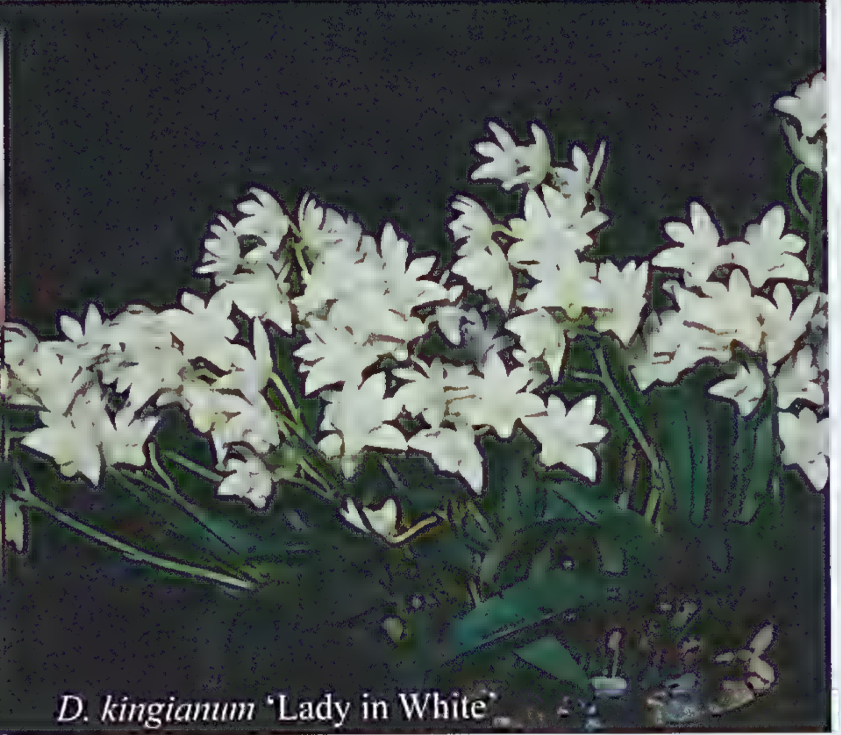
Dendrobium kingianum breeding began with Bill and Jean Cannons of Wayside Nursery at Port Macquarie in 1960–74 using selected plants, mainly collected in the region by others. Ken Russell (Orchid Glen Nursery) began breeding plants with the objective of supplying the pot plant trade, and the Hastings River Kingianum Growers Group (HKGG) (consisting of Harry Klose, Alwyn Flanagan, Alan Garrett and later Rod Graham) began in the mid 1970s with guidance from Bill and Jean. Ted and Barbara Gregory commenced Merrellen Orchids in 1979 after moving from the Manning Valley, New South Wales to Mt. Tamborine, Queensland. Stewart and Helen Penman (Border District Orchids) began breeding in the early 1980s and Neil and Meg Finch (Down Under Native Orchids) committed to full time commercial production of Australian orchids in 1985 at Kilaben Bay, Newcastle.

Our non-commercial breeding of *D. kingianum* commenced in 1987 in Melbourne after meeting and looking at the progress of the northern breeders. Apart from Lloyd and Mandy Edwards (Earth To Joy Nursery) who have focussed on breeding for the pot plant trade, breeding by other nurseries and individuals has been limited.

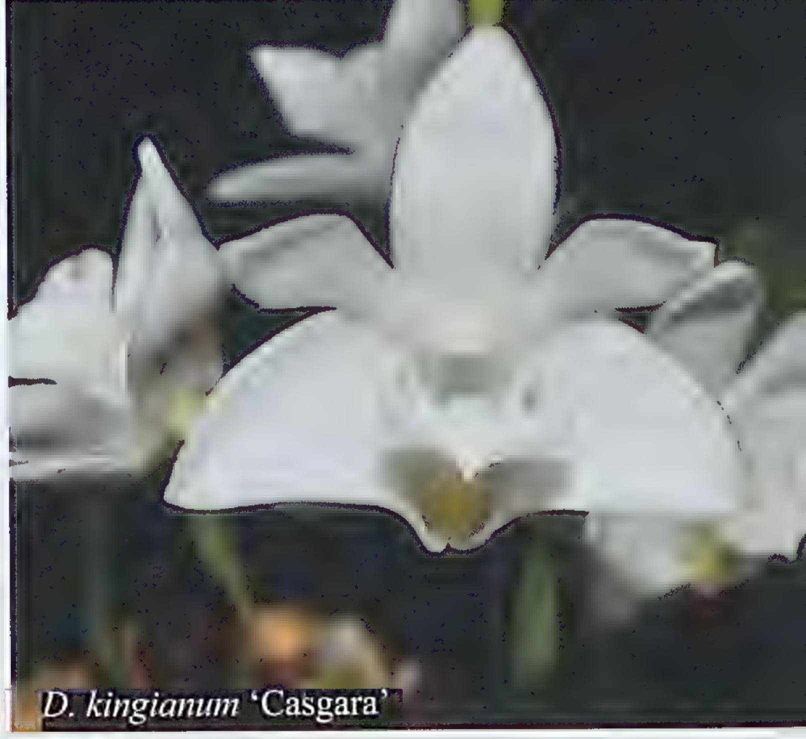
The HKGG programme involved breeding in most colour groups to improve colour intensity and quality, with no particular objectives for flower count or size. The red/purple line was attempted in 1974, with initially unsuccessful selfings and combinations described in this issue and by Klose (1981). Their first viable seed was flasked in 1976. The group later supplied breeding material to Merrellen Orchids and DUNO as well as other Newcastle growers. They continued until around 1992, when breeding of *D. kingianum* generally declined.

Using short to medium height plants from the southern part of the range, HKGG did not expect more than 6–9 flowers per raceme, and found that with progressive generations the flower count fell below 6. Raceme strength could not be improved in the red/purple breeding lines. Many crosses failed to produce viable seed while others grew poorly or not at all. These plants were discarded. Whites were very difficult to improve, and in any colour class flowers >30 mm diam. were a good result if presenting well.

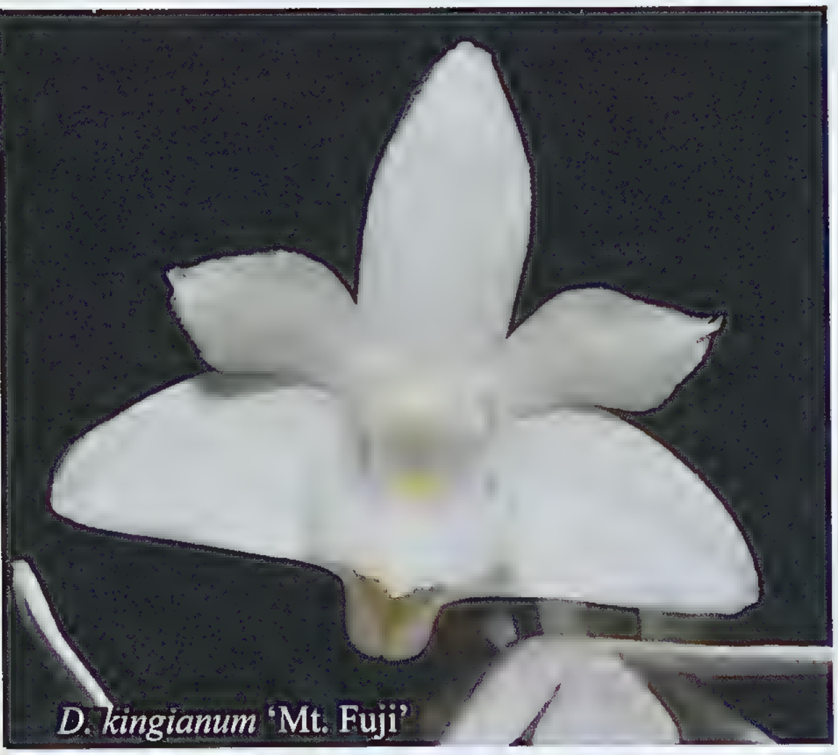
A feature of HKGG was the annual September assessment of flowering results followed by breeding discussions, which we attended on several occasions from 1981. Harry Klose (1981) presented preliminary results of the programme at the 6th New South Wales Regional Conference in



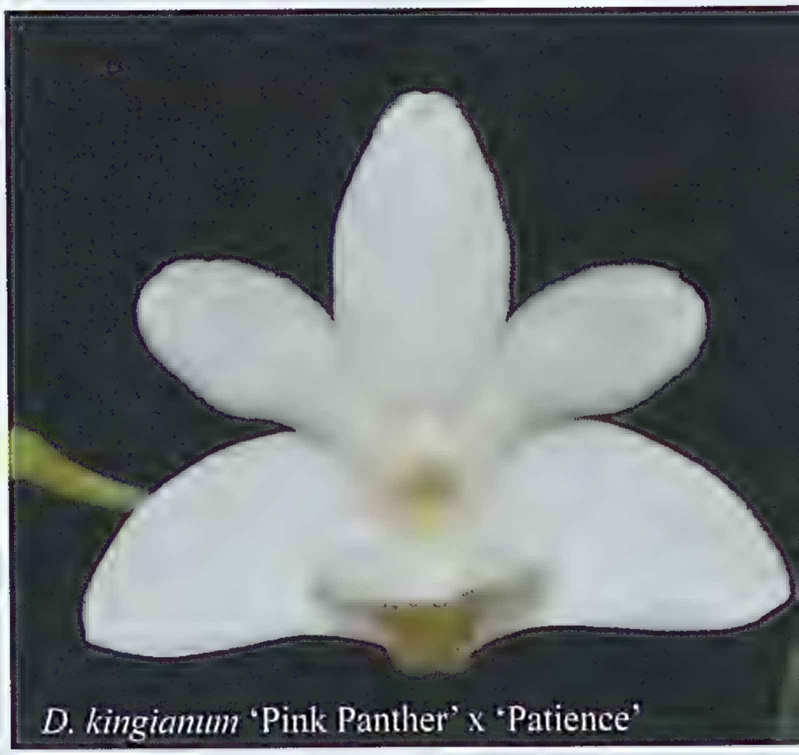
D. kingianum 'Lady in White'



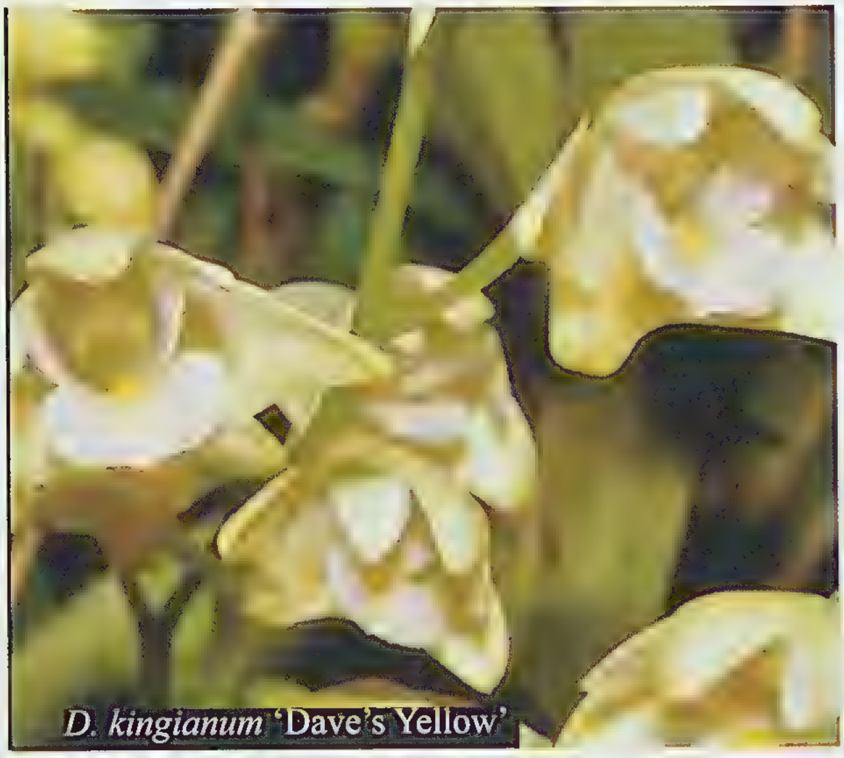
D. kingianum 'Casgara'



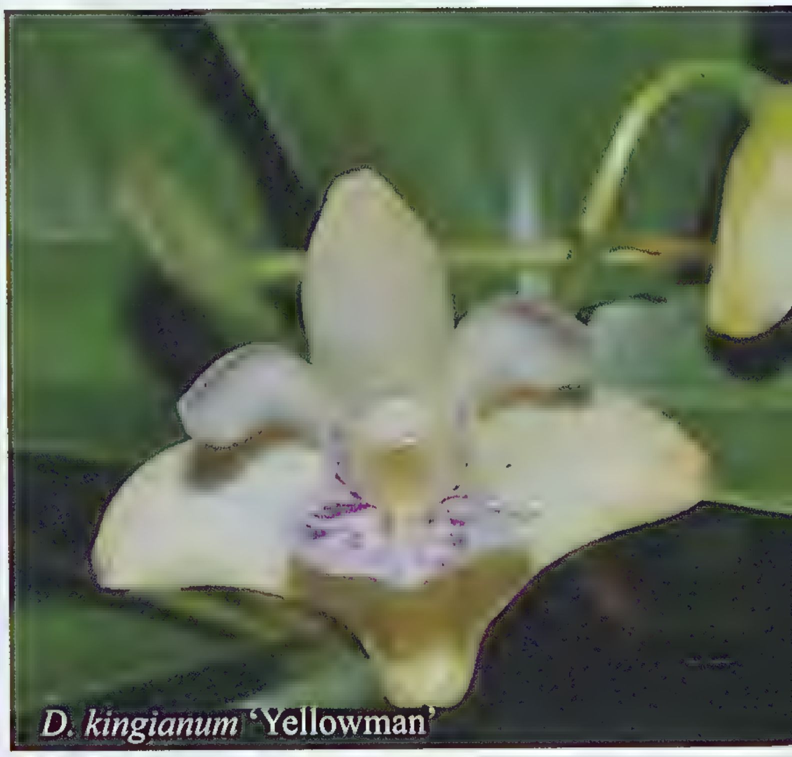
D. kingianum 'Mt. Fuji'



D. kingianum 'Pink Panther' x 'Patience'



D. kingianum 'Dave's Yellow'



D. kingianum 'Yellowman'

White and yellow *D. kingianum*

Wauchope.

There has been some confusion about this history, and *D. kingianum* breeding is often falsely equated with the search for a deep purple (black!) flower. HKGG attempted to develop a range of colours, as have Merrellen, DUNO and ourselves. The best results have come from the mauve and splash purple lines, as measured by quality award results and illustrated in this article.

Breeding was never intended as a conservation measure, and has not had a significant effect on the decline of plants in the wild. In the 1960s to 1980s plants were freely available at low cost from licensed collectors, sourced from logging areas until logging was ceased. The quality of plants from an exhibition and judging perspective was low, and consequently few orchid growers collected significant numbers of plants in the wild. Breeders were very selective in taking small pieces from plants, but preferred to leave the rest of the plant in the wild as a back-up. Population depletion is mainly caused by land clearance, access roads to remote areas, and destructive land practices such as careless burning off which allows hot fires to run out of control up rocky hillsides. The general public, who don't buy commercial seedlings, collected plants from any accessible area, sometimes to sell. In the past 20 years commercial breeders have provided few seedlings in their catalogues, and good plants, even with awarded parents, attract limited interest.

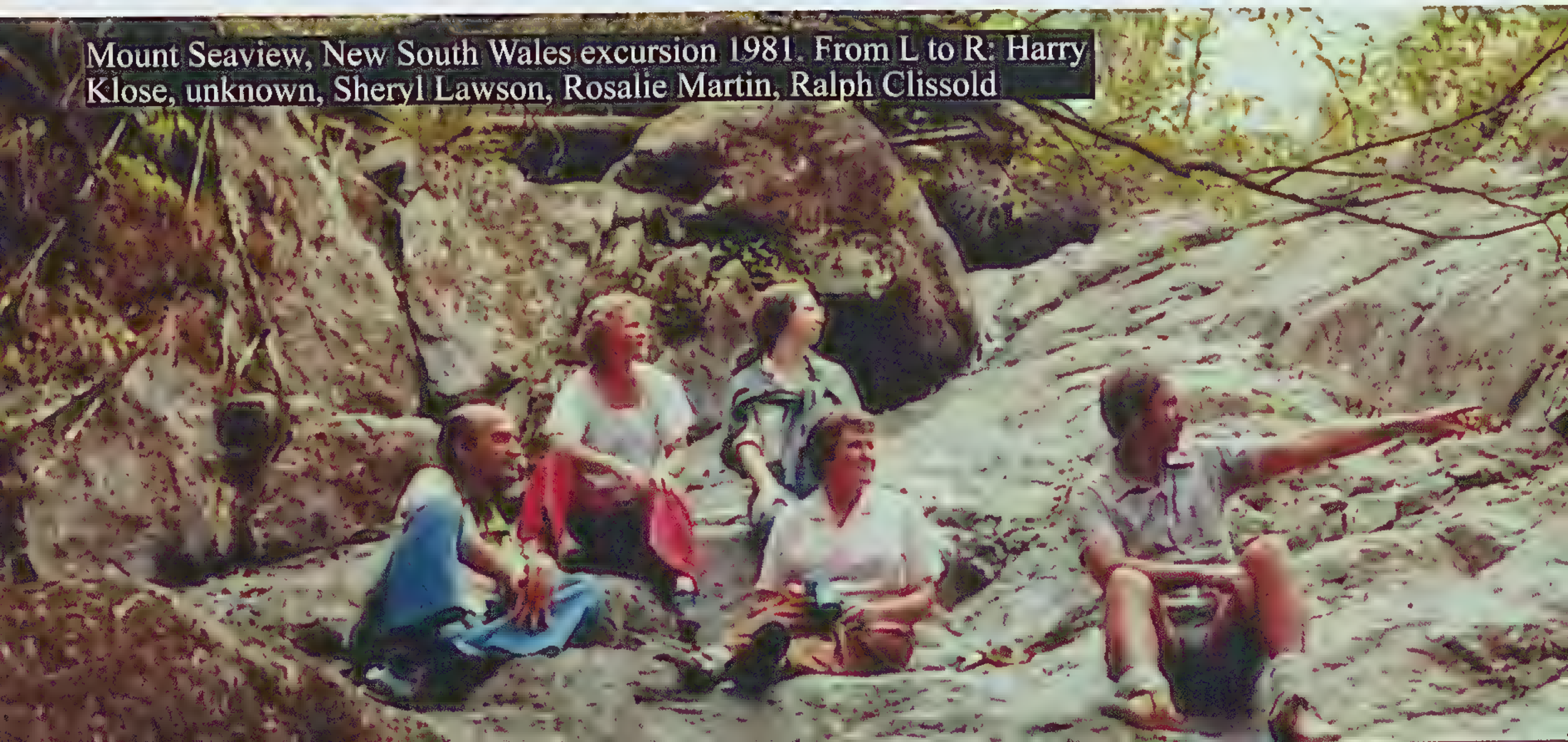
LA Orchids Breeding Program 1987–2017

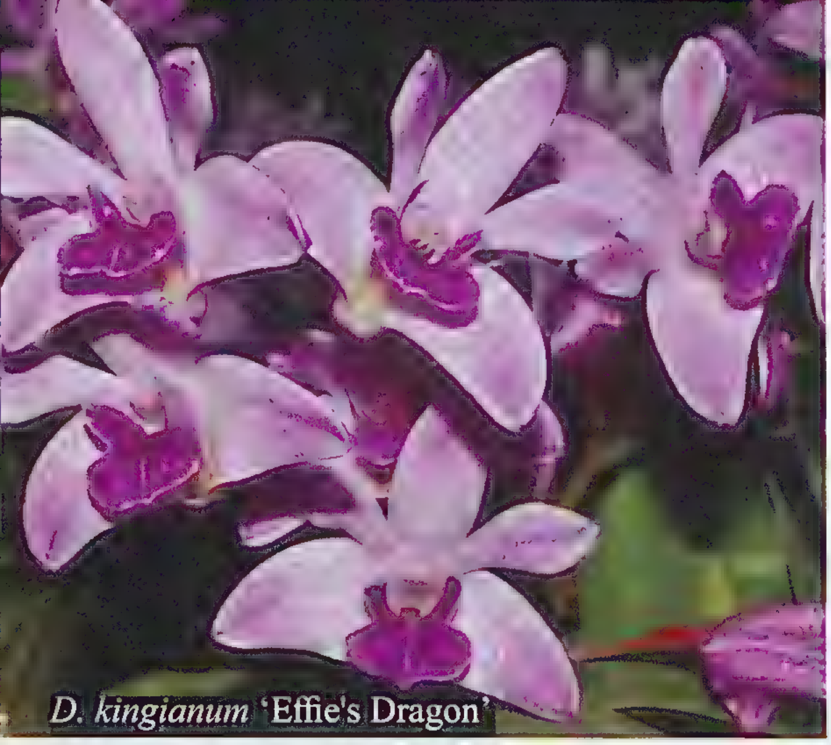
The inspiration for our breeding lines originated during our first trip to the Hastings River region in 1981. We took part in a field trip organised by Rosalie Martin, a local grower and Hastings River Orchid Society (HROS) committee member. We met and became associated with the HKGG and other breeders. On this and subsequent visits, the standard of the exhibits at the HROS Spring show, often presented in 12 inch squat pots or larger, left an indelible mark on me and a desire to become active in breeding Australian orchids. I have never seen large exhibits of *D. kingianum* like this again, and was unaware that the quality was award level, as there were no judging panels available at the time.

A further impetus was the difficulty of obtaining breeding plants. Plants raised in New South Wales and Queensland nurseries did not grow and flower as well in the Victorian conditions of very hot summers and cold winters. For us, the seedlings offered in catalogues did not live up to expectations. Before commencing breeding, we investigated the breeding system for *D. kingianum* for about 5 years in the early 1980s, discovering that some plants would not set seed, outcrosses were usually successful, selfings were only occasionally successful and that some plants of a few localities, e.g. Gloucester, were triploid and may not breed.

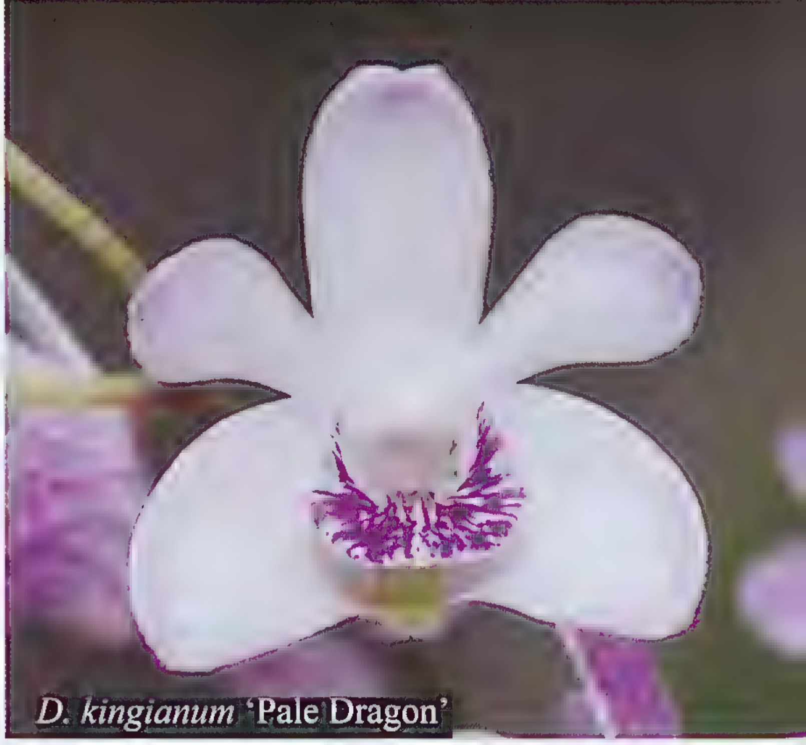
We bought seedlings and occasional wild collected divisions from several breeders – Ken Russell, Ted and Barbara Gregory and HKGG. We crossed plants from different origins. All of the plants used were short compact forms from the southern part of the range.

Our early crosses from 1987–1992 used outstanding

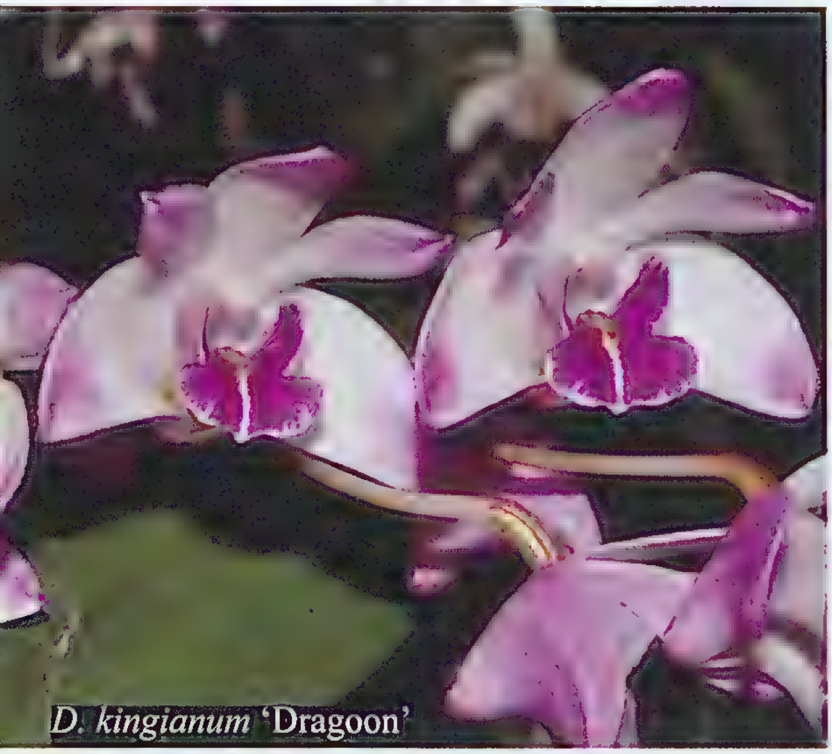

Mount Seaview, New South Wales excursion 1981. From L to R: Harry Klose, unknown, Sheryl Lawson, Rosalie Martin, Ralph Clissold



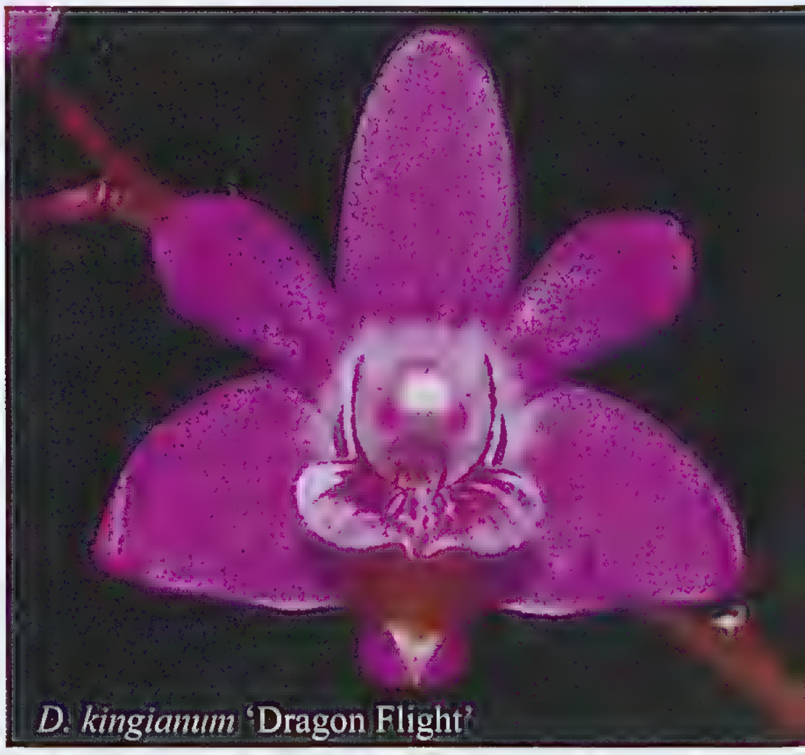
D. kingianum 'Effie's Dragon'



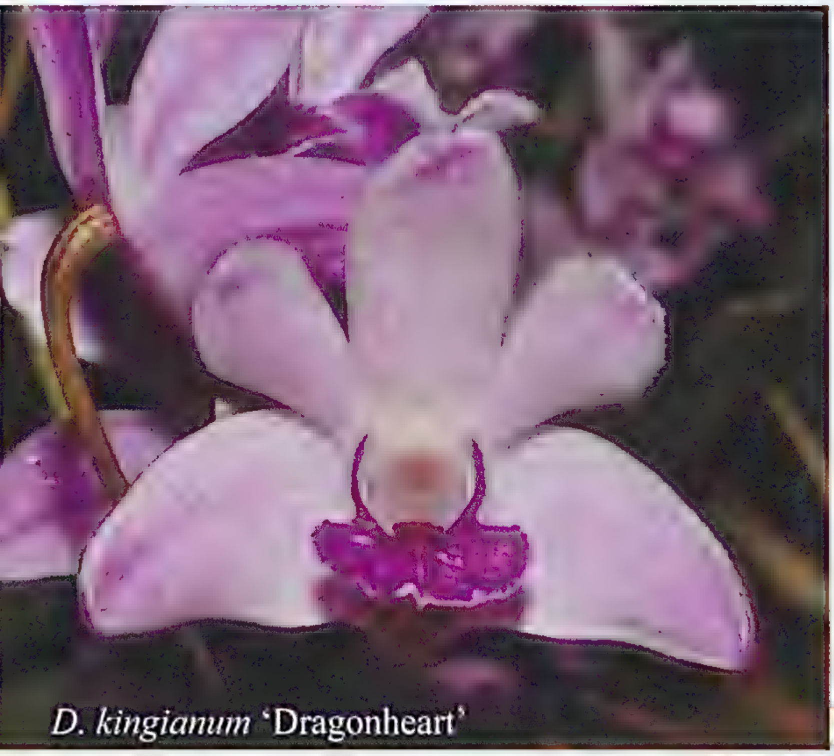
D. kingianum 'Pale Dragon'



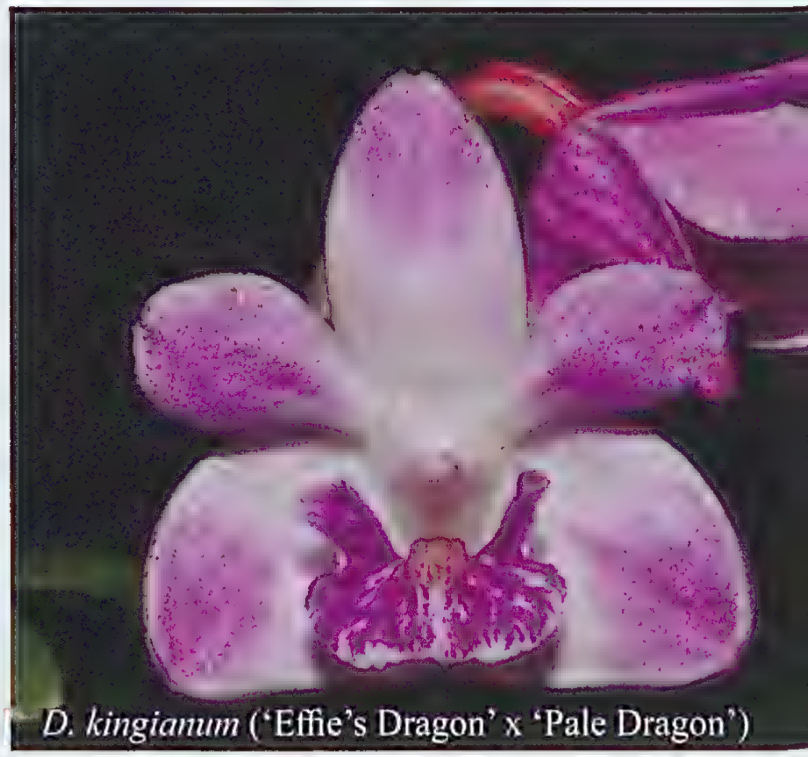
D. kingianum 'Dragoon'



D. kingianum 'Dragon Flight'



D. kingianum 'Dragonheart'



D. kingianum ('Effie's Dragon' x 'Pale Dragon')

***D. kingianum* Dragon series**

wild collected plants and bred seedlings but the initial results were not improvements - a sign that progress was difficult and likely to be slow (Figure 1). Results for the years since 2009 are still to be fully assessed.

Our objectives were:

- vigorous plants that were short and compact
- racemes well presented and upright
- larger, well textured flowers
- a variety of colours - mauve, splash petal, purple and white
- dense floral display
- to improve the line breeding to award standard for our own personal interest, not as a commercial objective

Breeding is a big numbers game

We made crosses in 17 seasons between 1987 and 2016. Each generation needed to be assessed before making more seedlings that would take up a great deal of space. There was an average of about 25 crosses per year, using pollen exchange between both parents. Around 15–20 capsules were eventually flasked annually, with about 75% resulting in seedlings, and 20–70 plants were deflasked and grown to flowering. Calculating an average of 15 capsules a season, and 50 plants surviving to flowering, we have produced around 12,000 flowering plants. If seedlings grew very poorly, or first flowering results were uniformly poor, batches were discarded, so the eventual number of plants fully assessed will be about 6,000 when the existing plants have all been processed. Full assessment takes at least 2 or 3 years from first flowering. We are still assessing results of 2006–2009 breeding, and some 2010–2013 plants are still to flower. The whole exercise represents a lot of orchid house space and nurture, and an exercise in patience that many would question as being worthwhile.

These numbers are small compared with those of a commercial venture, where nearly all the plants are sold as seedlings and the flowering cannot be accurately assessed. Few make it back to the place of their origin.

Successful crosses may be defined as those producing at least a few significantly improved plants, in my experience about 5–10%, often less but occasionally more. Of course, many plants can produce a beautiful display without reaching ANOS quality award standard.

We took a somewhat different approach from other breeders because of our cooler, less humid Victorian environment. Gloucester origin and 'Tunstead's Pink' seedlings were particularly difficult to grow. Highly regarded plants such as *D. kingianum* 'Tunstead's Pink' and 'Gloucester' x self did not produce promising results in our crossings, and in the first eight years very few crosses produced any plants that were an improvement on the parents. This was similar to some of the results of Merrellen Orchids, who crossed excellent plants like 'Tunstead's Pink' and 'Middle Brother Silcockii' and saw very few improvements. We grew all seedlings to flowering, an advantage over commercial breeders who had to sell almost all of a cross and had a low chance of ever seeing an exceptional result. A few isolated outstanding seedlings were identified, but results were unpredictable, with future breeding plants usually discovered by chance rather than from design or knowledge of genetics.

Some promising early lines (see Adams & Lawson 1995 for plant details) were:

'Candy Striper' x 'Iceberg' line (Candy Striper series - pastels, mauve, splash mauve)

'Candy Striper' x 'Tunstead's Pink Seedling' line (Cannons) (pastels, mauve)

'Black Adder' line (based on HKGG line, purple)

'Cream 69'x self line (pastels, white)

Gloucester origin purples x Hastings River region origin purples (mauve, purple)

'Purple Peon' x 'The Monster' (Dragon series - mauve, splash mauve and splash purple)

Candystripes and Dragons

The Candy Striper and Dragon series have generated some fine results and have continued for another three generations. *Dendrobium kingianum* 'Candy Striper' was a small seedling purchased from Ken Russell. The parents from the Glenreagh area, 'Glenreagh' and 'White Star', are rather straggly plants and the cross was not rated highly, with 'Candy Striper' the only known outstanding example. The plants were not good growers, and 'Glenreagh' itself is a very slow grower in my conditions. However, plants of this region have features that are passed to their progeny - a striking candystripe labellum, up to three racemes per pseudobulb, and most can grow well in colder southern parts of Australia due to their origin further inland and at higher altitude. The crossing of 'Candy Striper' with 'Iceberg' restored vigour, but dividing the early plants of the line can result in a setback.

The parents of the Dragon series, 'The Monster' and 'Purple Peon', were Ken Russell seedlings of several generations that had clear potential for breeding. They are short growing plants based on plants originally from cool upland areas of Dorrigo Plateau, Middle Brother Mountain and Glenreagh, and they pass to their progeny desirable features of solid, well shaped flowers on stout racemes, and sometimes solid labellar colour.

Dendrobium kingianum 'Black Adder' and 'Candy Striper' received AOC quality awards, the latter was a Grand Champion at the Victorian Orchid Club show. It was a successful breeding parent. It was a poor grower which did not appreciate dividing.

The next step was to breed between the siblings of these lines and within colour categories. There was a clear improvement in the next generation in some seedlings, but in less than 20% of the progeny. This was sufficient to make further selections for breeding.

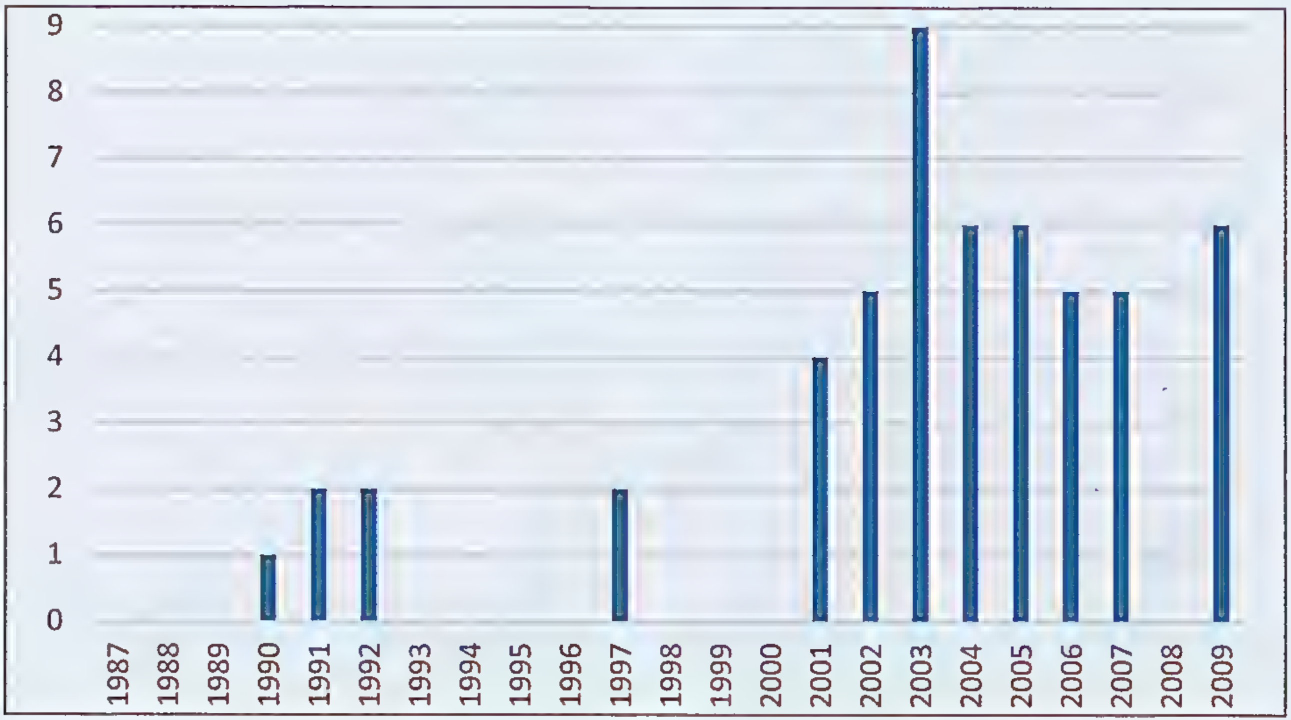
Our Timeline

In calculating the time to a flowering result, it is necessary to factor in the period from pollination to first flowering. There is a year to deflasking, a further 2–3 years to first flowering of a number of small seedlings, and 3–4 years more to develop the plant to a 6 inch pot size in our cool conditions. Thus there is a minimum of 8 years for a second generation result and for some slower growing seedlings, a further 3 years to grow to optimum.

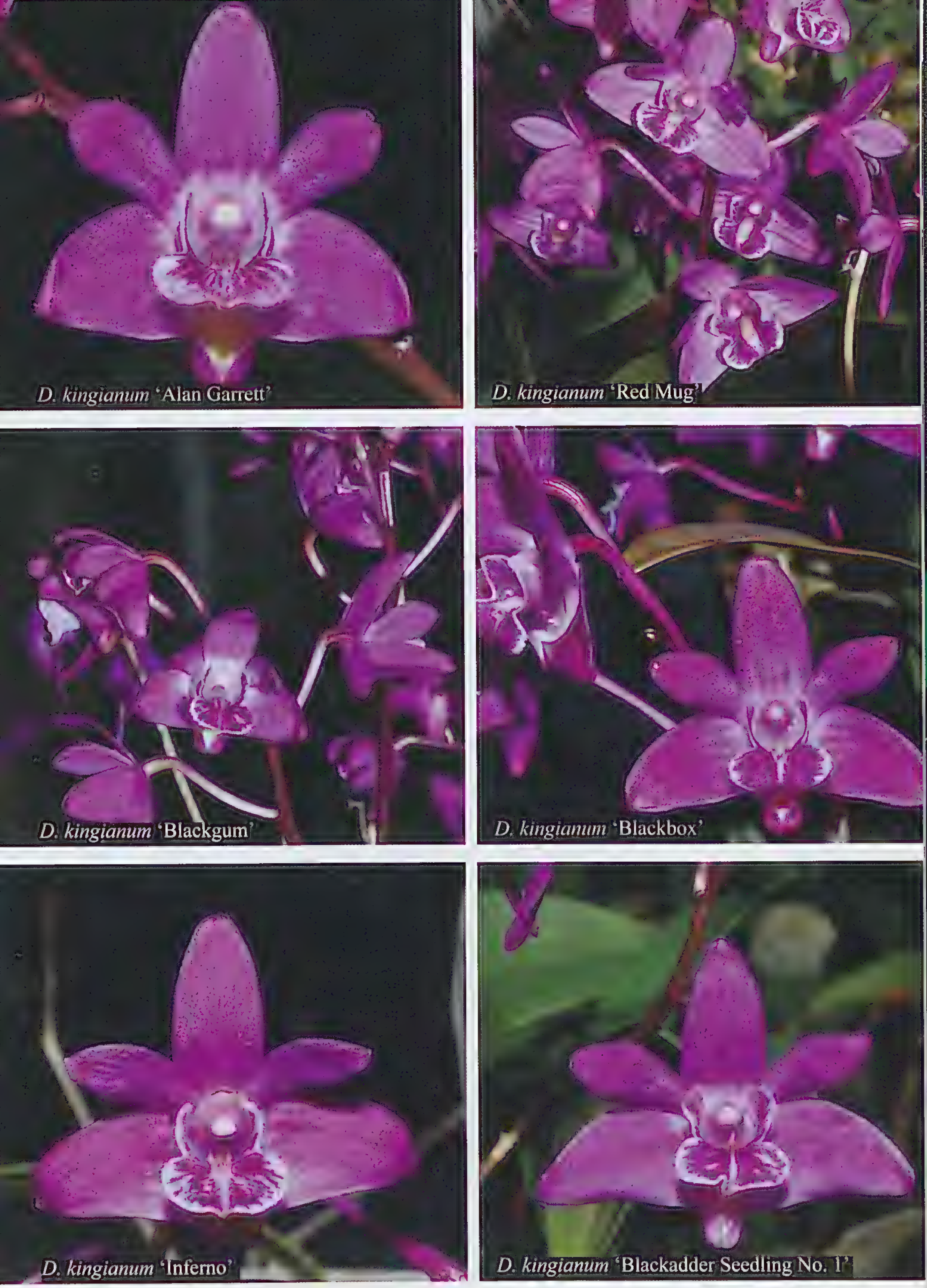
In Melbourne it was 12 years for us to fully evaluate the second generation of flowering, and in retrospect potential breeding plants emerged at this time.The next phase involved combining the best of the second generation lines, with further improvement in results.

Improvements have been greater with increasing years and generations (Figure 2), provided plants grow well and seed is produced in sufficient quantity. This does not necessarily happen as the number of line bred generations increases. Most of our lines have continued to produce viable seed (sometimes less in quantity) and to have vigorous growth, with a few exceptions which have been discarded. The flower count does reduce in some crosses, as found by HKGG, but less so in mauve and splash purple lines, and the flower size and

Figure 1. Number of outstanding *D. kingianum* seedlings produced by LA Orchids.



Year of making *D. kingianum* crossings.



D. kingianum 'Alan Garrett'

D. kingianum 'Red Mug'

D. kingianum 'Blackgum'

D. kingianum 'Blackbox'

D. kingianum 'Inferno'

D. kingianum 'Blackadder Seedling No. 1'

Purple *D. kingianum*

quality have increased.

The 'Candy Striper' line has produced 10 Australian Orchid Council quality awards, but with further breeding has been largely superseded by more vigorous growing plants. There are no Victorian ANOS awards due to the unavailability of ANOS judging in Victoria until 2016. The 'Dragon' line has nine AOC awards, and many more have flowered at similar quality. We combined lines of the 'Dragon' and 'Candy Striper' series, and 'Cream 69' and 'Candy Striper' series. These advanced crossings have received four AOC awards so far.

Since ANOS judging began in Victoria in 2016 the first award for *D. kingianum* has been *D. kingianum* 'Queen's Jewels' AM/ANOS, which is a cross of 'Pale Dragon' x 'Bar Speckler'. The seedling 'Jacques Miller' has a flared labellum and received HCC/AOC as a small plant. It is yet to flower to full potential. Examples of our recent flowerings are shown in this article. We still have crosses to evaluate and there is plenty of potential for further line breeding in mauve, splash mauve, splash purple and white lines.

In retrospect it is understandable that early breeders produced few improvements, as the time course to achieving consistent results is 15–20 years. Our objectives were modest and achieved to a reasonable extent. Better results are likely from the most advanced generations still to flower.

Breeding for Colour

Colour inheritance

Colour inheritance in *Dendrobium* involves many genes for xanthophyll and carotenoid pigments. Combinations of genes determine outcomes, not simply dominant and recessive genes. Mauve and purple colours are most common, with pure white less common and cream and yellow rare.

Mauve, splash mauve and splash purple

Many breeding lines from a variety of breeders have produced consistently pleasing results, and we have also found these colours to be the most successful (Table 2). All of the lines listed above in our program have produced some outstanding plants in these colours, from pastels to intense almost fluorescent mauves.

Purple/red

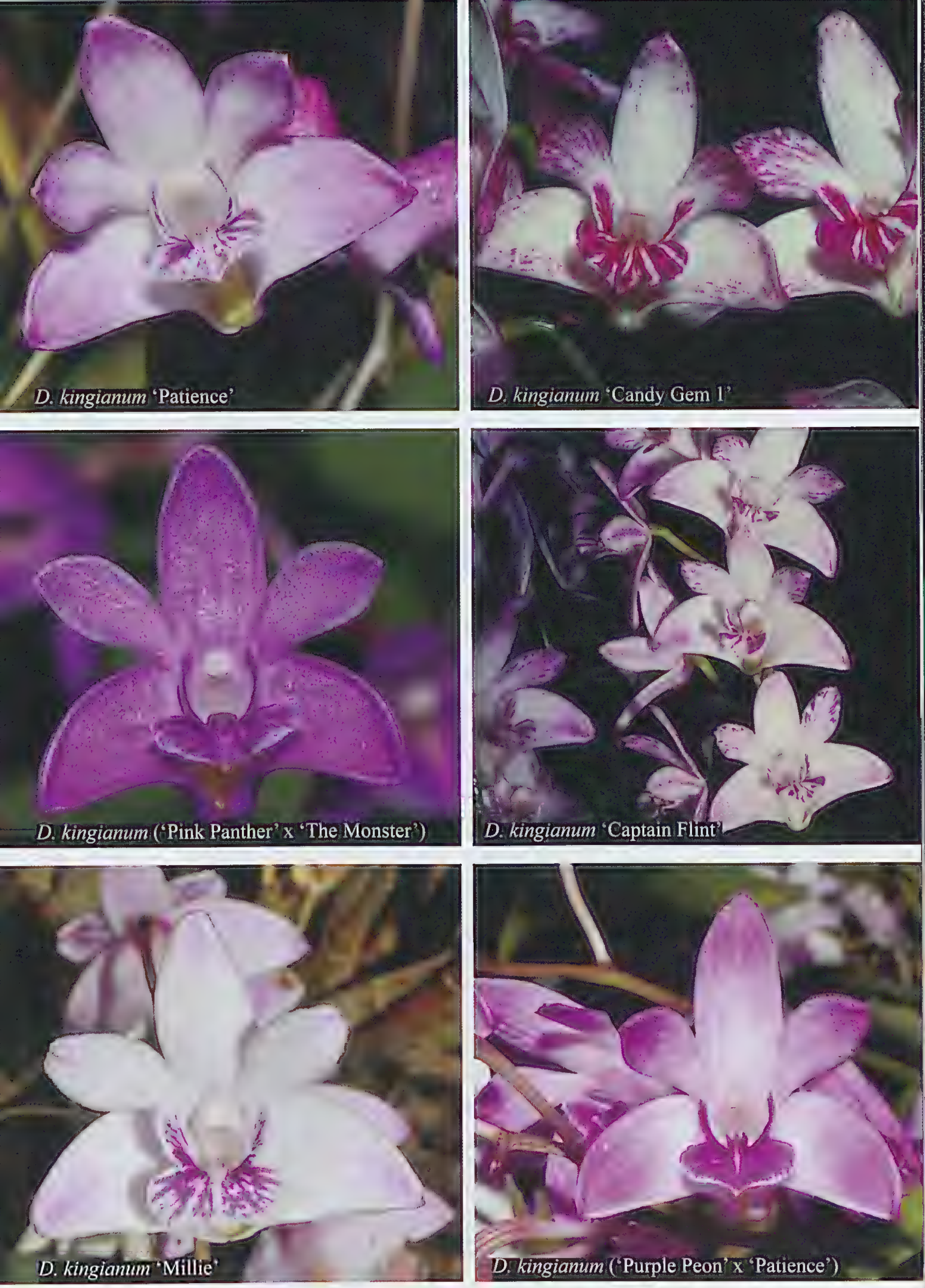
The purple breeding lines based on Gloucester plants and the original work of HKGG, Neil Finch and other Newcastle growers, has been largely limited in consistently producing plants of award quality (Table 2). 'Black Adder' and 'Alan Garrett' are exceptions. These plants are triploids (Adams 1992), and as a result many would not self pollinate, cross with each other or with the diploid purples. Many of the plants grow poorly under our conditions, drop leaves easily and have floral deformities such as abnormal petals. Outcrossing to other purple lines from different localities, such as 'Red Gum' and 'Inferno' from Cairncross (Hastings River area), can restore vigour and retain strong colour. Harry Klose estimated that only about 5% of plants from his crossings in the purple line were true purple in colour.

Speckled Purple

These plants have deep purple speckles or lines

Table 1. Breeding Different Colours in *D. kingianum.*

Colour	Breeding efforts (No. of attempts)	Improvement	Frequency of high quality seedlings
white	moderate	few	low
lavender	low	few	very low
mauve	moderate	fairly common	moderately common
splash mauve	moderate	few	moderately common
purple	high	few	fairly low
splash purple	moderate	few	moderately common
blue-mauve	low	nil	rare-nil
silcockii	low	nil	occasional
purple labellum	low	few	occasional
creamy/yellow	low	nil	rare-nil
speckling/stripes	moderate	few	occasional


D. kingianum 'Patience'

D. kingianum 'Candy Gem 1'

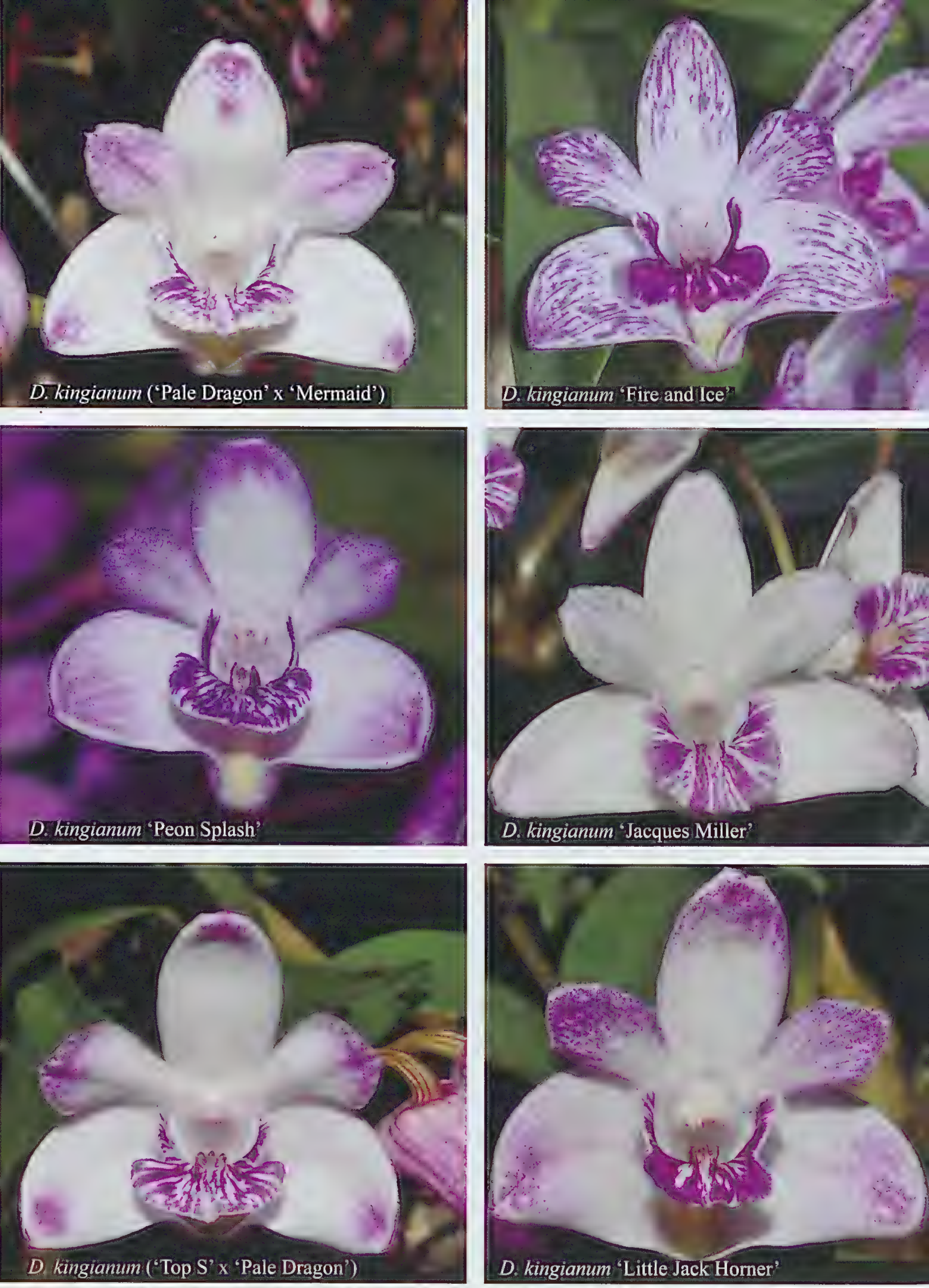
D. kingianum ('Pink Panther' x 'The Monster')

D. kingianum 'Captain Flint'

D. kingianum 'Millie'

D. kingianum ('Purple Peon' x 'Patience')

Mauve *D. kingianum*



D. kingianum ('Pale Dragon' x 'Mermaid')

D. kingianum 'Fire and Ice'

D. kingianum 'Peon Splash'

D. kingianum 'Jacques Miller'

D. kingianum ('Top S' x 'Pale Dragon')

D. kingianum 'Little Jack Horner'

Advanced line breeding of *D. kingianum*

on the sepals and petals. They have emerged from different lines, for example the 'Candy Striper' series, 'Pink Perfection' x 'Albert West', and 'Meg' x 'Persephone'.

White

The 'Cream 69' line is best known, but white seedlings have emerged from a number of mauve breeding lines e.g. 'Candy Striper' x 'Iceberg', 'Candy Striper' x 'Cream 69'. Many of these seedlings contain genes for mauve and purple. Crossing with a white seedling produces an occasional white seedling, but most of the siblings are mauve and splash colours.

Yellow

Several natural plants are pale yellow e.g. 'Hobbs', 'Minyon Falls', 'Beechmont Cream'. Several more contain cream-yellow backgrounds with mauve e.g. 'Sunrise' and 'Peaches and Cream'. Some pale yellow colours have also arisen from breeding lines including 'Tunstead's Pink' e.g. 'Dave's Yellow', 'Helen's Cream', 'Tumbler's Cream' (Adams & Lawson 1995).

When we crossed the above in various combinations to intensify the yellow, the results were disappointing, with only a few seedlings which resembled the parents in colour and without intensifying colour or improving quality. The flowers appear yellow when in bud, are pale yellow on opening, then fade to creamy white with age. Most progeny were mauve.

Blue/Mauve

Natural examples include 'Archie's Bald Knob' (Gloucester), 'Blue Creek' (Upper Hastings area), 'Dick Henry' (blue tepal tips, Hastings/Comboyne). Crosses designed to intensify the blue colour have been so far unsuccessful and seedlings resemble the parents.

Lavender

'Tunstead's Pink' is the classic example, with flowers that open white but develop a delicate lavender blush with age, especially in the centre of the flower. It tends to be dominant in breeding and many seedlings exhibit the same pattern of colour change. Seedlings are slow growing in Victoria and most have not flowered as well as the parents.

Awards

There are 50 AOC quality awards for *D. kingianum* and 3 Awards of Special Recognition for breeding. Of these, 32 quality awards and all three ASR are from our breeding. Mauve, splash purple and splash mauves colours dominate the AOC awards, and some purples are really a deep mauve as the distinction can be hard to make. Without seeing the plants it is almost impossible to classify colours, as Royal Horticultural Society colour matching skills vary and mauve-purple shades may be poorly reproduced in photographs. Some red/purple flowering plants are rather straggly with less floriferousness than the dominant award colours.

There are several plants that have been awarded by AOC as *D. kingianum* that are not correctly identified but are attractive hybrids. These are 'Kings Park' (2004), 'Chrystal Ice' (once listed as HCC/AOC, but no longer on the list) and 'Valdon' (1997), which are both *D.* "Bigfoot" hybrids (Adams 2006).

Table 2. ANOS and AOC awards for *D. kingianum* classified by colour.

Colour	**ANOS awards**	**AOC awards**
purple	0	6
splash purple	2	14
splash mauve	0	5
speckled/purple splash	0	4
mauve	3	11
speckled	2	4
white	0	2
silcockii	0	1
lavender	0	1
speckled mauve	0	1
Total	**7**	**49**

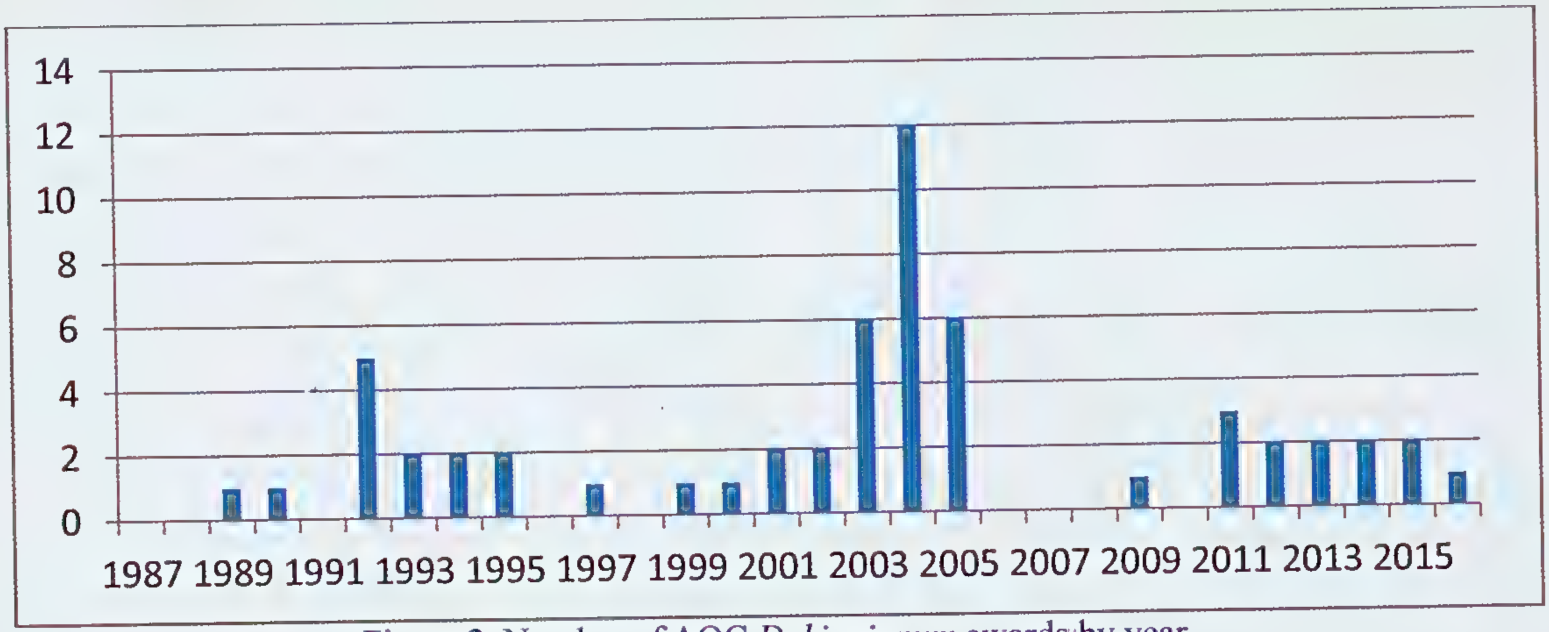


Figure 2. Number of AOC *D. kingianum* awards by year.

There are four plants which have received ANOS quality awards since 1963, including two AM awards in 2016. Three plants have an AD/ANOS and another has an ACC/ANOS. In the ANOS awards, mauves, splash purple and speckled flowering plants are the only colours represented, with no purples, as they are very difficult to develop to award quality.

The low rate of ANOS awards is related to several factors. Many plants of award quality have not been presented to a judging panel, it is difficult to grow plants to award standard, and the short life span of flowers makes it difficult to present them in optimal condition to a panel. There are also few specialist growers of the species.

Culture

Dendrobium kingianum is not an easy species to grow to the highest standard. Evaluating a cross in a breeding program and developing plants to award standard requires close attention to the media, cultural techniques, fertilising and providing optimal light for different stages of growth. Growing requirements vary greatly at different locations. Small seedlings and deflasked plants require more shade and water than mature plants.

Shallow pan culture with *Casuarina* bark media in a shade house works well in central and northern New South Wales, but in the less favourable climate of the Dandenong Ranges in Victoria we use solid covered orchid houses and deeper pots with a small grade bark medium that allows greater moisture retention. This may also be suitable in southern NSW and Tasmania. These areas and the cooler conditions of Toowoomba and inland southern Queensland offer the best climate for growing and sustaining longer lasting flowers of *D. kingianum*. Annual repotting in fresh mix and additional fertilizer before the growing season gives faster growth. Potting on with minimal disturbance can be done at almost any time of the year.

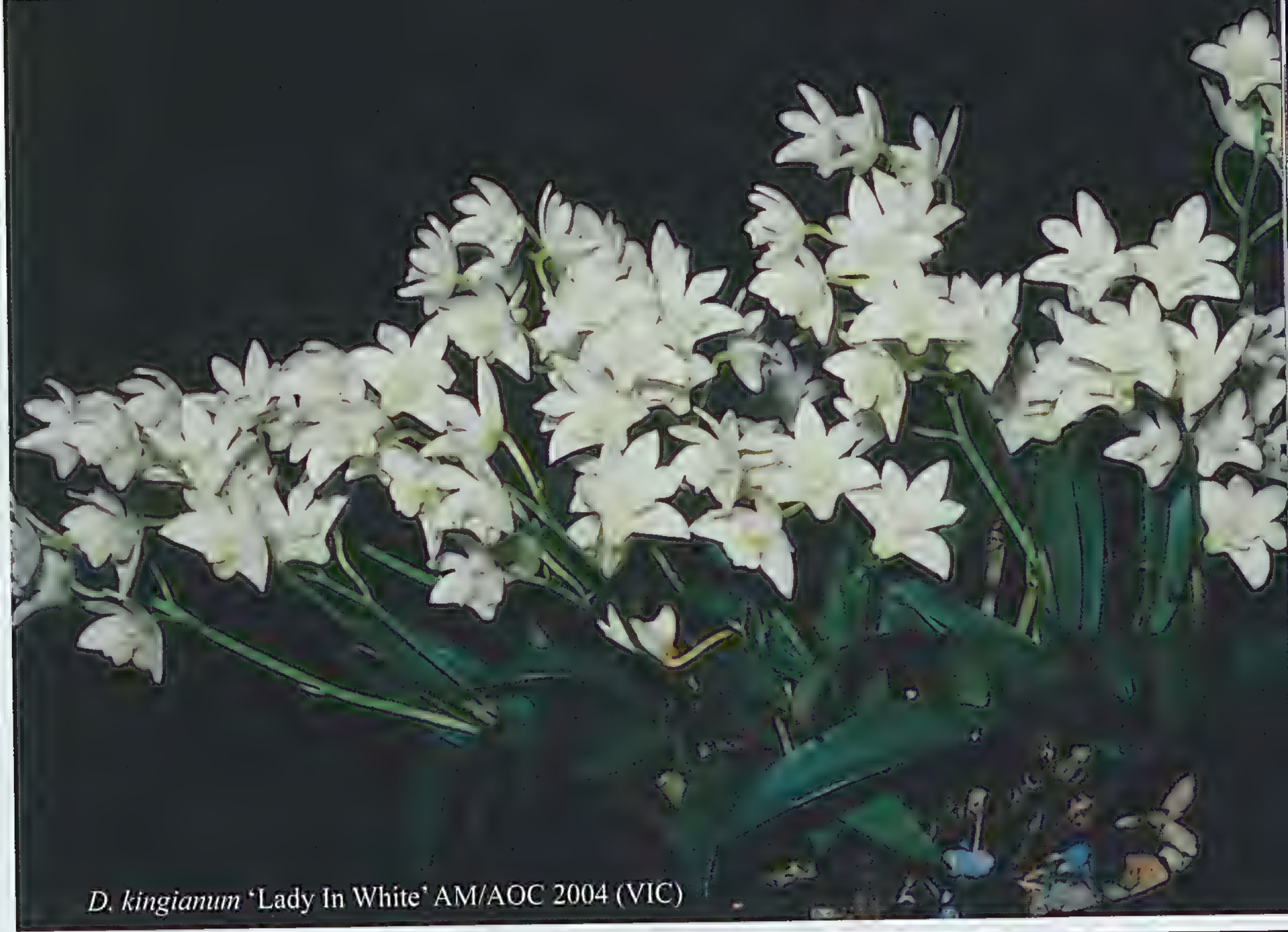
We have found that a mature plant in a 6–8 inch pot is optimal for achieving a successful display, although some plants may successfully develop into large specimens. Others tend to go backward and require division and regrowing.The major barriers to successful results are poor growing conditions, lack of light, over-fertilizing, failure to change growing media regularly and inattention to pests - mainly slugs, snails, aphis and caterpillars. At certain times of the year rodents can be very destructive.

Discussion

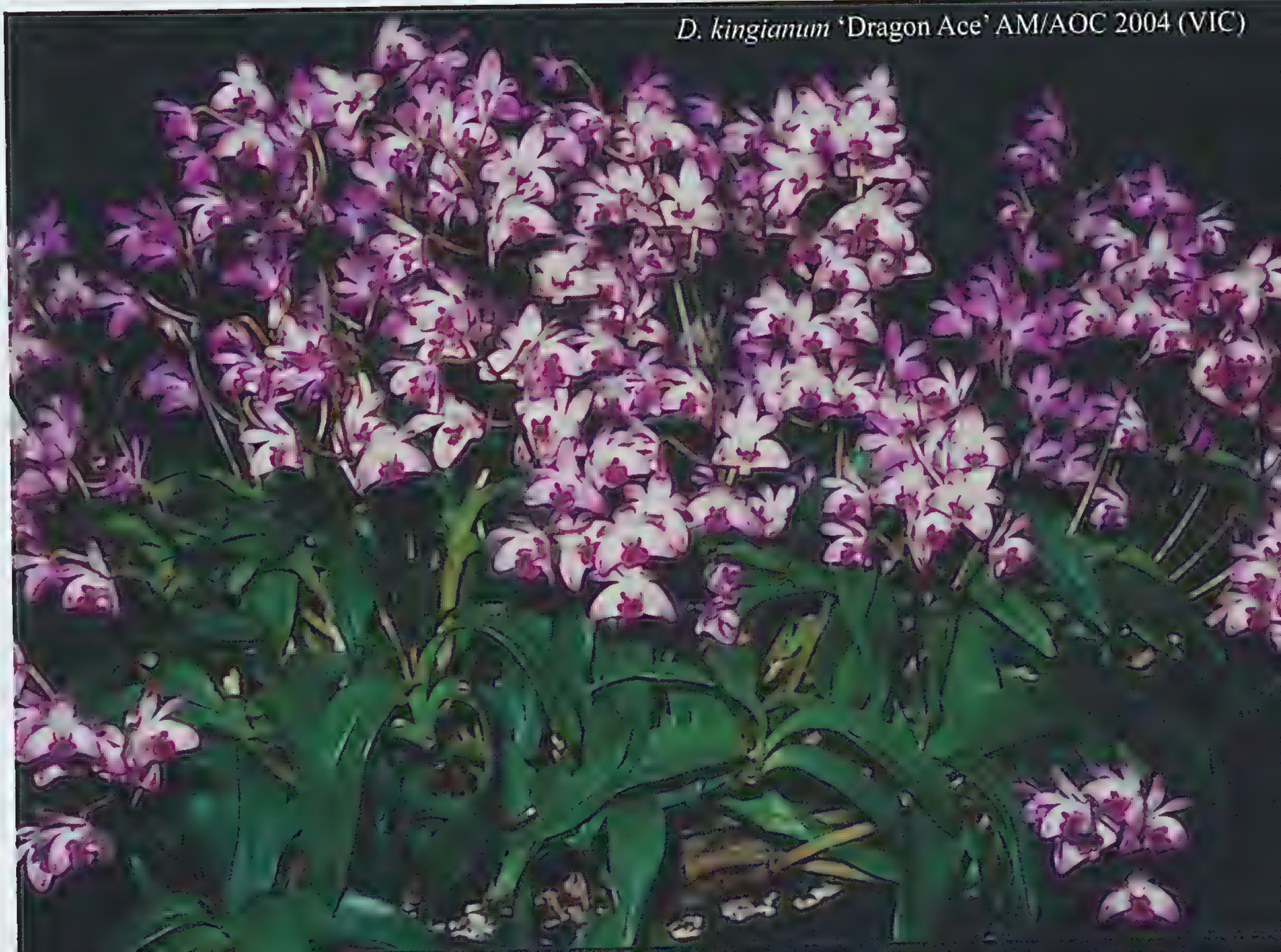
Breeding records

Breeding generates large amounts of information over many years with usually only a few outstanding plants and consistent breeding parents. It is unfortunate that many significant contributors to breeding have not written up their results and analysed the successes and failures, in the style of Kamemoto (Kamemoto et al 1999) who detailed the development of the international hard cane dendrobiums in Hawaii and elsewhere. The record books may survive, but they do not contain the insights and reflections that breeders can make after most of the work is complete.

Others cannot write accurately retrospectively unless they have been involved in the programs themselves. There are brief reports of results in a



D. kingianum 'Lady In White' AM/AOC 2004 (VIC)



D. kingianum 'Dragon Ace' AM/AOC 2004 (VIC) particular line of breeding, some in *The Orchadian* from time to time, but no adequate records of many major Australian breeders such as the Cannons, Sid Batchelor, or DUNO. Writing about this work is difficult and demanding, and may not often be a priority for people who have worked at a program for many years and wish to retire from it. The books of Walter Upton are probably the nearest to a treatise, but cover only a part of his wide activity.

Successes

Dendrobium kingianum breeding successes have been spasmodic for all breeders, if the measure is to produce a lot of outstanding plants and consistent breeding parents. Some beautiful and reliable flowering plants have been produced, and unfortunately not reflected in the number and scope of ANOS awards. There have been clear improvements in floral size, colour, substance and texture, and most importantly presentation of the floral display. The flowering season is short compared to some other dendrobiums, but in cooler conditions a flowering plant can be in good condition for two weeks. The flowering season under my conditions is at least a month and is predictable from year to year, allowing planning for exhibiting at a show. The best *D. kingianum* tend to flower between spring shows and *Sarcochilus* shows, and a specialist show in between these times would permit more to be seen. Seed viability and plant vigour are still good after 6–7 generations, and there are now sufficient breeding plants around to improve the species more rapidly than in the past. Displays of *D. kingianum* can and should be a highlight of the spring season in the southern part of Australia.

Significant advances have been made in line breeding. Activity levels have been low over a comparably short time of about 40 years with a generation time of 5–8 years. The breeding of other orchids has taken more than twice that long, and with much greater activity. It has been difficult to extend the flowering season and the longevity of flowers, and to breed new colours like cream, yellow, yellow/mauve and blue mauve. There is a way to go in producing purple flowering plants with heavy floral displays and excellent presentation, as seen in most paler colours. Breeding for one character alone, such as colour or size, is not worthwhile if the other features, especially plant vigour and floral presentation, are not maintained, and this may have contributed to a decline of interest in the species.

The time frame to improvements has been slower than envisaged initially and spasmodic (Figure 2). We are only at about seven generations. It is clear that *D. kingianum* breeding is a specialist activity and not a commercial venture, due to slow plant growth, time to flowering, and short flower life. The best plants needed for making progress are now scattered about the country and need to be conserved for a renewed phase of activity with a broad goal of developing a wide variety of plant forms and colours. The most difficult initial phase has passed, with the next and more exciting phase not yet begun.

Acknowledgements

Sheryl Lawson is the co-breeder in our program and assisted in writing this article. Keith Riseley assisted with award information.

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Dendrobium tetragonum 'Jess' - A Feel Good Story

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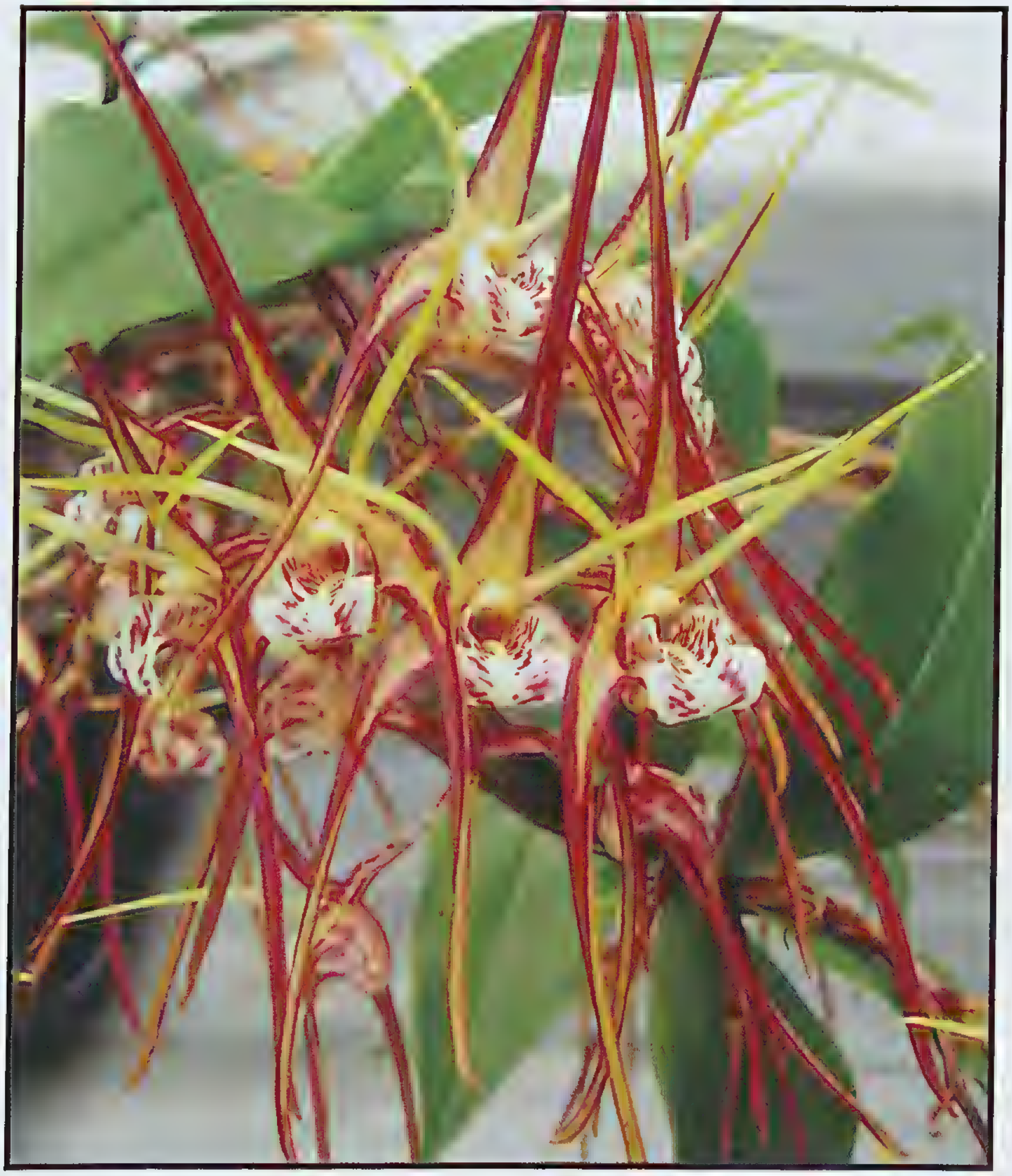
My good fortune in benching the Grand Champion at the 2016 ANOS Conference and Show began some years ago when Mike Fish generously gave me a small aerial growth taken from his *D. tetragonum*. Mike's impressive plant is mounted on a cork slab and is a real picture of robust good health. It is from the crossing of 'Gold Spia' x 'NM', both type forms of *D. tetragonum*, and has now been named *D. tetragonum* 'Jess'. Mike tells me he picked it up as a small two-growth seedling in a tube from Daryl Smedley at the last of Ken Russell's Dungog shows.

In the lead-up to the recent conference I was asked by Bernie Fletcher if I might have a few *Sarcochilus* which could be included in the table-top display he and Tony Blewitt were planning. When ready to set off for Kempsey a final glance in the shade-house revealed my *D. tetragonum* and as it looked nice, I made room in the box with the *Sarcochilus*. Being of modest size in an 80mm pot it fitted nicely into the display by being draped over a mossy log as part of the natural bush setting. When I left I was blissfully unaware of the need to nominate plants for judging and Bernie and Tony thoughtfully nominated the *D. tetragonum* or the story would end there.

During judging, I am told the plant was being held aloft in a rather unsteady manner and Grahame Young came to the rescue by providing a proper stand for it. To do this Grahame kindly rearranged the plants in his display to free up one of his special stands. There is little more to the story except for my surprise in learning on the phone that my diminutive *D. tetragonum* had done well. Surely a team effort and resulting from the generosity and thoughtfulness of orchid friends.

David Butler is a well known hybridist and grower.



D. tetragonum var. *tetragonum* 'Jess'

Dendrobium chordiforme 'Fred'

Text and photographs by Fred Fear
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Several years ago I observed this interesting *Dendrobium* sect. *Rhizobium* species from New Guinea in a show held by ANOS Newcastle Group. I wondered if I would be able to grow it successfully under the conditions where I house my other sect. *Rhizobium* plants. Approximately 12 months later I was able to purchase a small seedling of the plant from Brian Gerhard at Down Under Native Orchids. I mounted the plant on a piece of brown tree fern log. The plant grew well for me and reached a reasonable size quicker than other plants.

I was a little disappointed in the first flowering, the flowers being smaller than I had seen and the segments were somewhat reflexed. The plant continued to grow rapidly and every flowering since has been very good.

I have found that the flowers do not like hot weather, which is understandable, considering the natural habitat in New Guinea of *D. chordiforme*.

I grow my teretes in a house which runs north to south and is covered with 50% shade factor white solar weave. The roof has a gap running down the centre, which is 600 mm wide covered with 50% shade cloth. The sides of the house are covered with white solar weave down to bench height, below which is covered with 30% shade cloth to ground level. My theory for this is to allow natural air movement. As the air warms up it goes out the top with cooler air entering under the benches. The plants are hanging down the centre under the gap. For those summer days with very hot north-west or westerly winds, I have an evaporative air cooler to help keep humidity up and temperatures down a little.

I always water the pots of my orchids by hand using a hose, with rain water pumped from a 200 litre drum which is filled from a tank (more about the drum later). However mostly the plants are watered with overhead sprinklers. They only receive fertilizer at half strength, every second watering.

Pumping rainwater from the 200 litre drum and not directly from the tank allows fertilizing to be done when required, as I have a setup that enables me to connect the hose from the pump to the sprinkler system above the plants, thus facilitating feeding with the sprinklers. My theory is overhead watering and feeding is more suited to the growth habit of teretes.

For one reason and another I have been unable to get my *D. chordiforme* to a show and now it has grown to a size that makes it extremely difficult to transport. Recently the plant flowered with 240 inflorescences, bearing about 5336+ flowers. I was fortunate enough to have a panel of NSW AOC Judges attend my home, where they awarded the plant an Award of Merit and also an Award of Cultural Excellence. Where I live makes it difficult to have ANOS Judges attend, as none live in the area.

I find *D. chordiforme* is an easy plant to grow, rewarding me with a great floral display.

Fred Fear is a grower and highly successful exhibitor from New South Wales.

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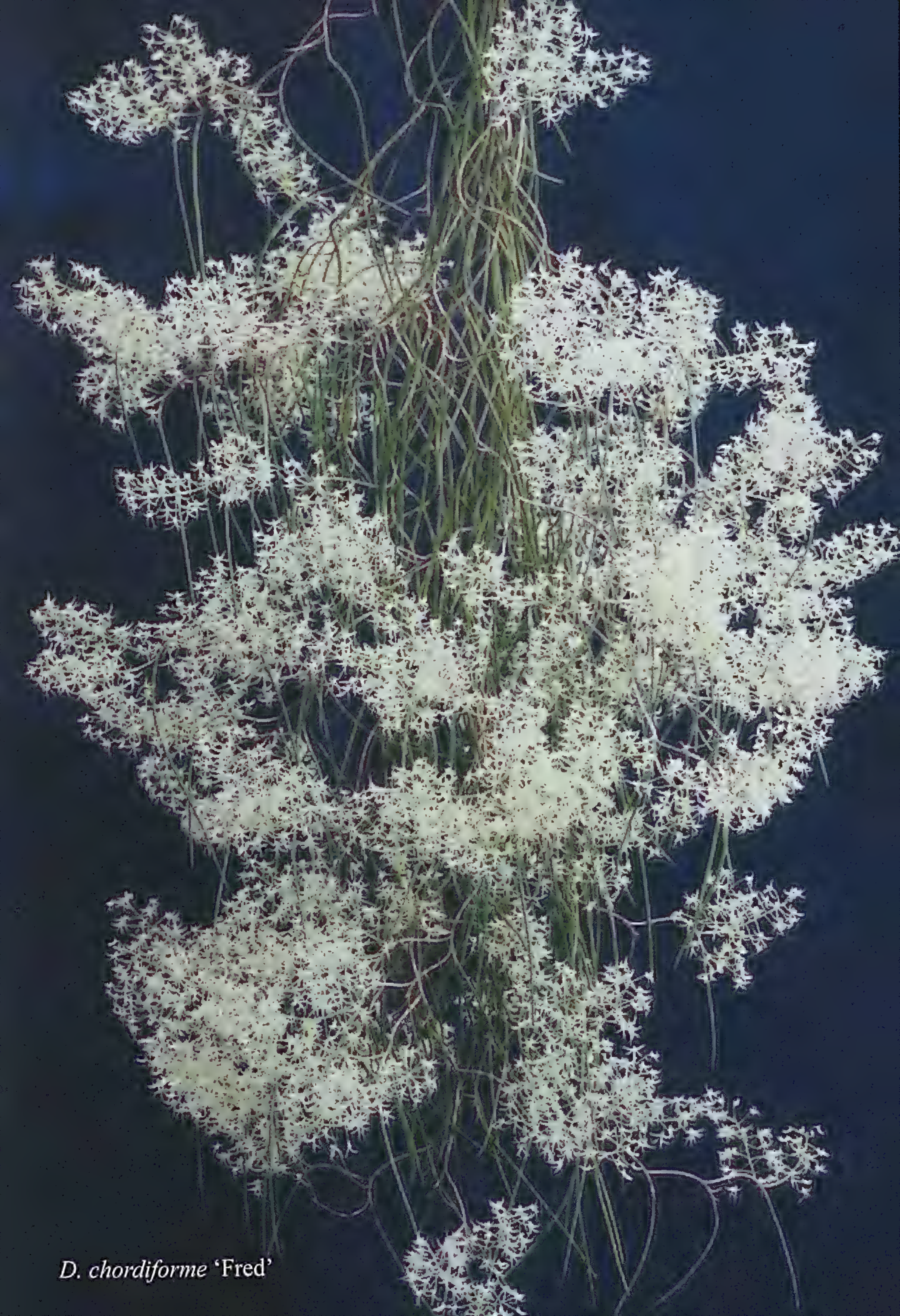

D. chordiforme 'Fred'

What's in a Name? Reverend Dr. Ronald Collins

Sheryl Lawson
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Plant names can be very informative. They can refer to particular characteristics of the plant or their distribution, and sometimes they are named to commemorate people. This is what *Dendrobium collinsii* (syn. *Cadetia collinsii*) and *Liparis collinsii* have in common.

Ronald Collins (1981–1989) was born in Townsville and grew up at Kirrama Station at Cardwell. He was an Anglican priest in Australia, and briefly in England, was married and had three children. He reportedly became interested in growing orchids after attending the Chelsea Flower Show in England. After retiring to Atherton in 1963 he was President of the Atherton Orchid Society and is commemorated by the society with the Ron Collins Memorial Trophy for Best Species Orchid. But he is best known in orchid circles for his many exploratory trips to Cape York.

Ron had a large bushhouse in his backyard and a keen interest in growing species. He was a first port of call for many orchid people travelling north and was a major contributor to the exploration of northern Queensland searching for orchid species during the 1970s in particular. On advice from others I called in on him during my first visit to northern Queensland, and he was a wonderful and enthusiastic host, taking us into the local bush in his 4WD that afternoon where I had my first sightings of *Taeniophyllum, Dipodium pandanum, Dendrobium speciosum* var. *pedunculatum* and *D. canaliculatum* in patches of scrub near Atherton and Herberton. His knowledge and enthusiasm were extensive, and his influence was significant in the beginning of my continuing interest in Cape York.

Ron had an extensive library dealing with the history of North Queensland and a deep interest in botanical history generally. He presented a key paper entitled *Orchid Discoveries in Tropical Australia* (Robinson 1983 p. 85–90) at the 8th Australian Orchid Conference in Townsville. It covers the history of discovery of orchids in Cape York, starting with the disastrous striking of a reef by James Cook's *H.M.S. Endeavour.*

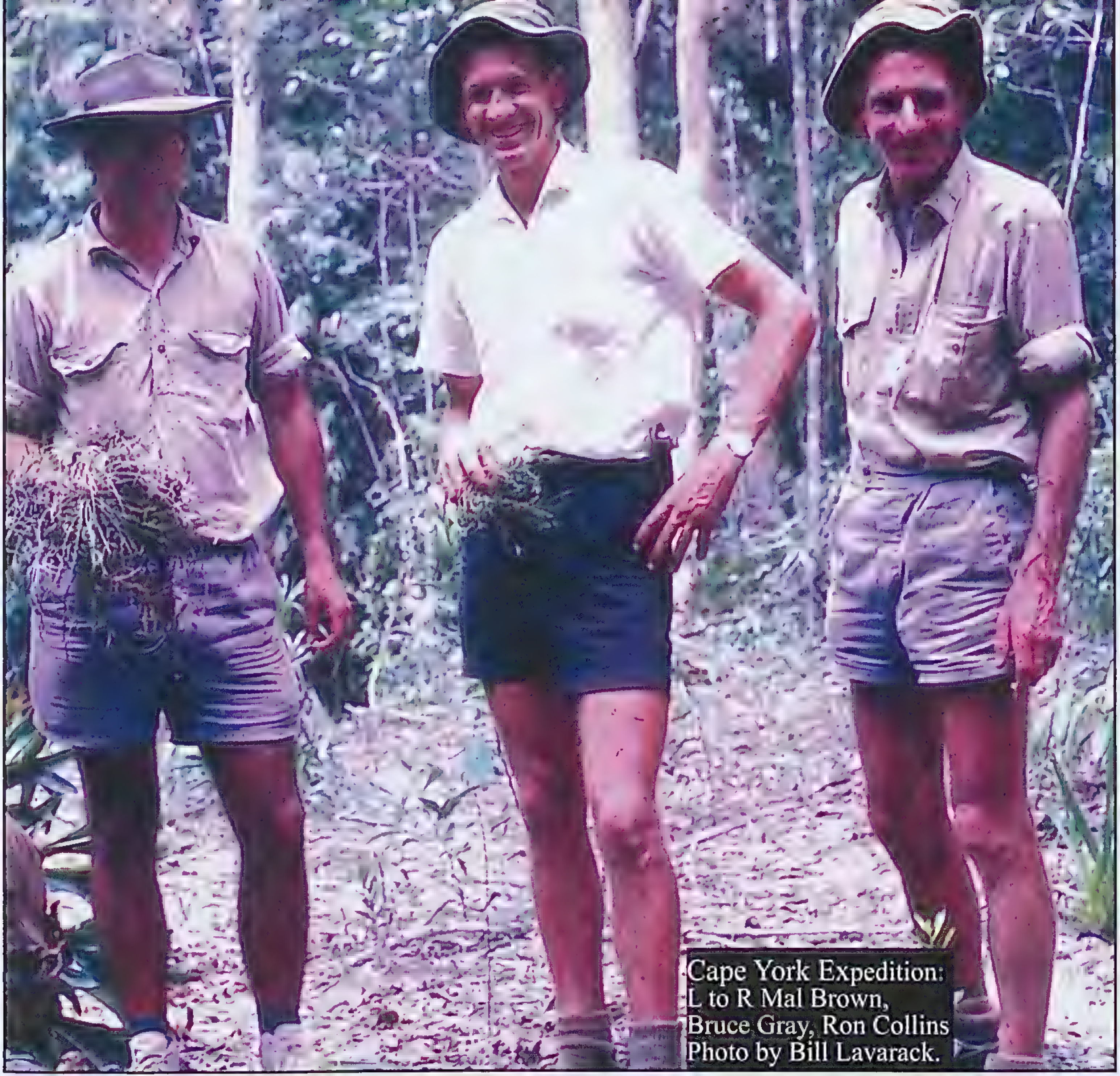
"Cook's magnificent seamanship enabled the stricken *Endeavour* to reach the mouth of what he named the Endeavour River, and on the southern bank moored the ship alongside a steep beach on the site of what is now Cooktown. The first European settlement of New Holland lasted for six weeks. Banks and Solander botanized while the Endeavour was repaired. Their assiduous collecting reaped some orchids – *Dendrobium discolor*, *D. canaliculatum*, *D. rigidum* and possibly *Thelymitra longifolia* if Bentham is to be believed."

Ron goes on to describe significant early explorations in tropical Australia by Robert Brown, Ferdinand von Mueller, John Dallachy, Frederick Manson Bailey and others before telling parts of his own story.

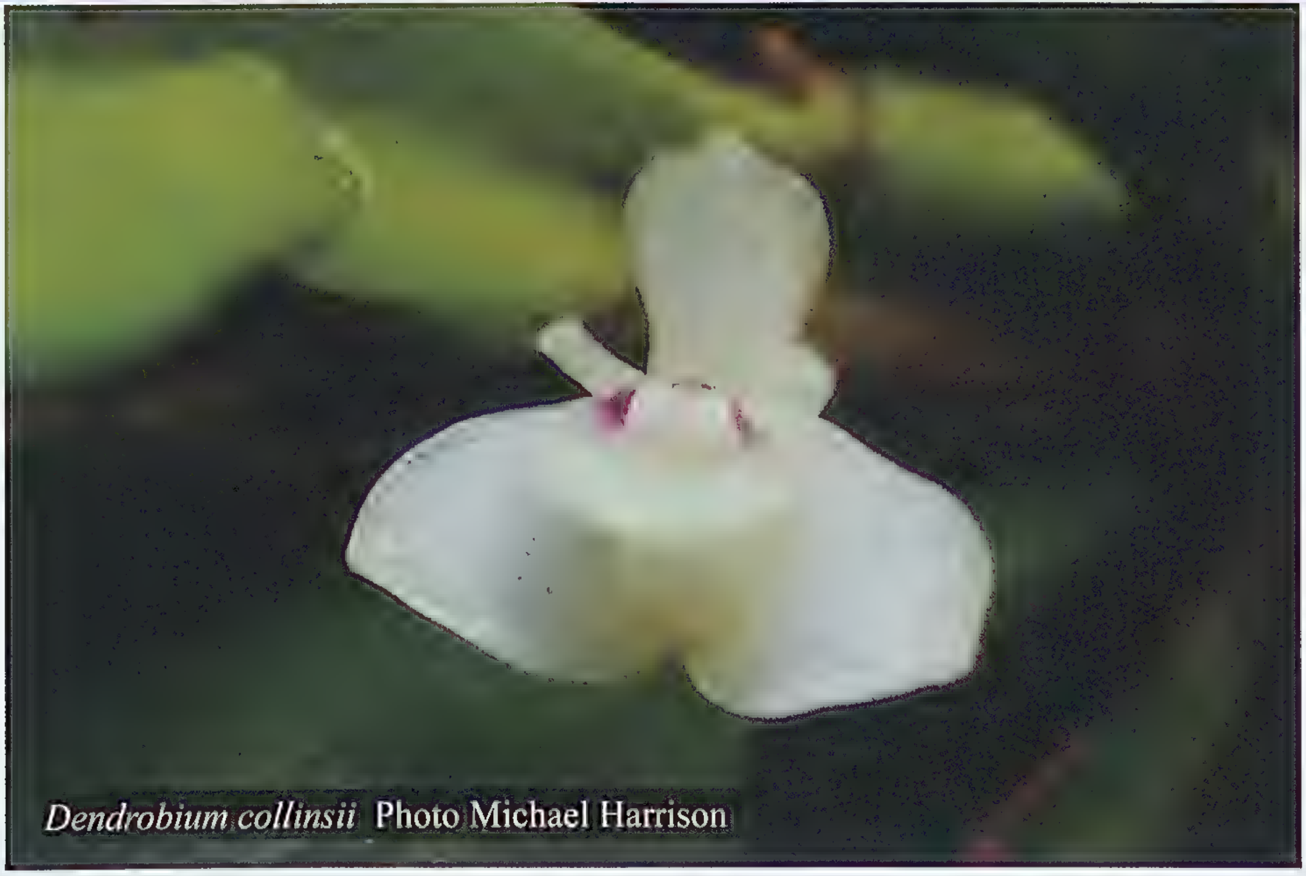
"There is a robust and prolific *Taeniophyllum* growing in the McIlwraith Range, and it is puzzling how this was overlooked for so long, for its existence was known. It is *Taeniophyllum malianum* and its collectors are noted as Brown, Lavarack, Collins and Gray in 1968".

"Bruce Gray and R.D. Collins had decided to look at the region with hope of finding something new. In August 1973 Collins accompanied a National Parks party of which P.S. Lavarack was a member which visited Heathlands and Capt. Billy Creek near the top of the Peninsula. The members decided to search in different directions on the 17th. That day both Lavarack and Collins discovered the same new orchid, and on comparison of notes Lavarack beat Collins by about two hours. The find was *Bulbophyllum masdevalliaceum*".

"In November 1973 Bruce Gray and R. Collins travelled to Coen and walked up Pandanus Creek. Unseasonable rain poured down in torrents; Coen registered nine inches of rain that night. They decided to get out as fast as possible to avoid being floodbound. On the way back to camp, Bruce Gray saw what he took to be a *Vanda* growing........ Collins noticed an old branched flower spike attached to the plant, and they knew that they had made a new discovery. It was *Pomatocalpa marsupiale*."



Cape York Expedition:
L to R Mal Brown,
Bruce Gray, Ron Collins
Photo by Bill Lavarack.



Dendrobium collinsii Photo Michael Harrison

"In 1973 Jones, Gray and Collins made a trip to Rocky River on the eastern side of the McIlwraith Range. They found a *Cadetia* sp. which proved to be new. In *Austrobaileya* Lavarack described it as *Cadetia collinsii* in 1981. The search for new species continues with unabated enthusiasm and the firm conviction that more are yet to be discovered'.

In the same publication Bill Lavarack (p.71) described Cape York Peninsula as the "last frontier in Australian orchid exploration" and detailed some trips of orchid discovery in the area. He described an expedition to the Cape in 1975 where he was accompanied by Bruce Gray, Ron Collins and Peter McLain. At this time three new orchid species were discovered – *Bulbophyllum gracillimum*, *Dendrobium tozerensis* and *Oberonia carnosa*.

Another expedition that Ron participated in was a trip led by Bill Lavarack in August 1973 to the Jardine River area (Lavarack 1986).

A larger group which included Ron was arranged for 1–27th September 1976 as the first Australian Orchid Foundation and National Parks and Wildlife Service of Queensland trip to Cape York, followed by further trips in 1978 and 1979. It was during the early stages of the latter that Ron had to be evacuated via the Flying Doctor Service at Coen, having developed leptospirosis. Other members of the group also came down with it later. These trips into what was then remote and relatively unexplored country were not for the faint hearted, and quite risky. Details of the 1976 trip are detailed in a report written by Bill Lavarack (Lavarack 1977). Base camps were established and the party undertook trips of up to two days, recording and collecting orchids and other plants. Sixty six orchid species were recorded.

In 1975 Bruce Gray and Ron Collins discovered a species of *Calochilus* near Chewko, west of Mareeba, later described as *Calochilus ammobius* D.L. Jones & B. Gray 2002 (*The Orchadian* 14(2): 85–86, 92–93) based on a type specimen collected by Len Lawler. The habitat was described as low sparse woodland on deep white sand, which was subjected to intensive sand extraction and a search of nearby areas found no further plants.

Cadetia collinsii Lavarack 1981 was first seen by Bill Lavarack at the Janet Range near the Iron Range in 1971. The Type was collected from Rocky River, Cape York Peninsula in Sept. 1975. The species was later named *Dendrobium collinsii* (Lavarack) Schuit. & P.B. Adams 2011, following the consensus view in *Genera Orchidacearum* Vol. 6, returning *Cadetia* to *Dendrobium* and placing them in sect. *Cadetia*. It is endemic to Cape York in McIlwraith Range and Tozer Range, found in shaded lowland creek gorges, and flowers around December to April. It is thought to be at least partially self-pollinating and flowers are white, with purple teeth on the column. The pod is striking for its long green hairs.

Liparis collinsii B. Gray 1992 was collected from the McIlwraith Range, north Queensland in Sept. 1990. Each stem has 10–20 very delicate flowers 2–2.5 cm diam. that are purple and green and are produced in the wet season. It is leafless in the dry season, and grows amongst boulders in open rainforest.

So what's in a name? A lot of history!

Acknowledgements

Thanks to Bill Lavarack for checking the text.

Sheryl Lawson is President of ANOS Inc. and an ANOS and AOC judge.

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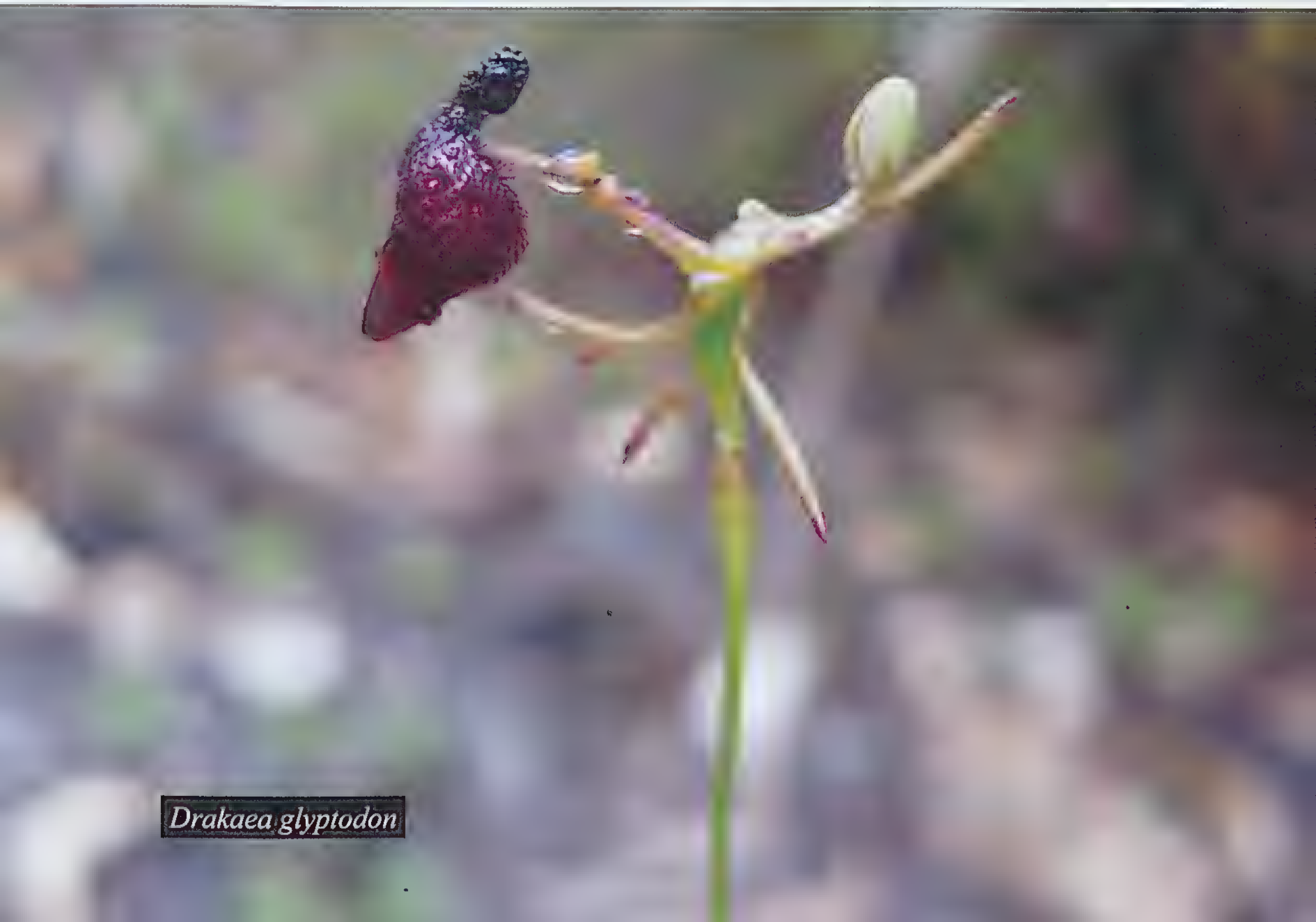
Conserving Miss Drake's Orchid

Text by Roslyn Capell
capell666@ozemail.com.au
Photographs by Peter Eygelshoven

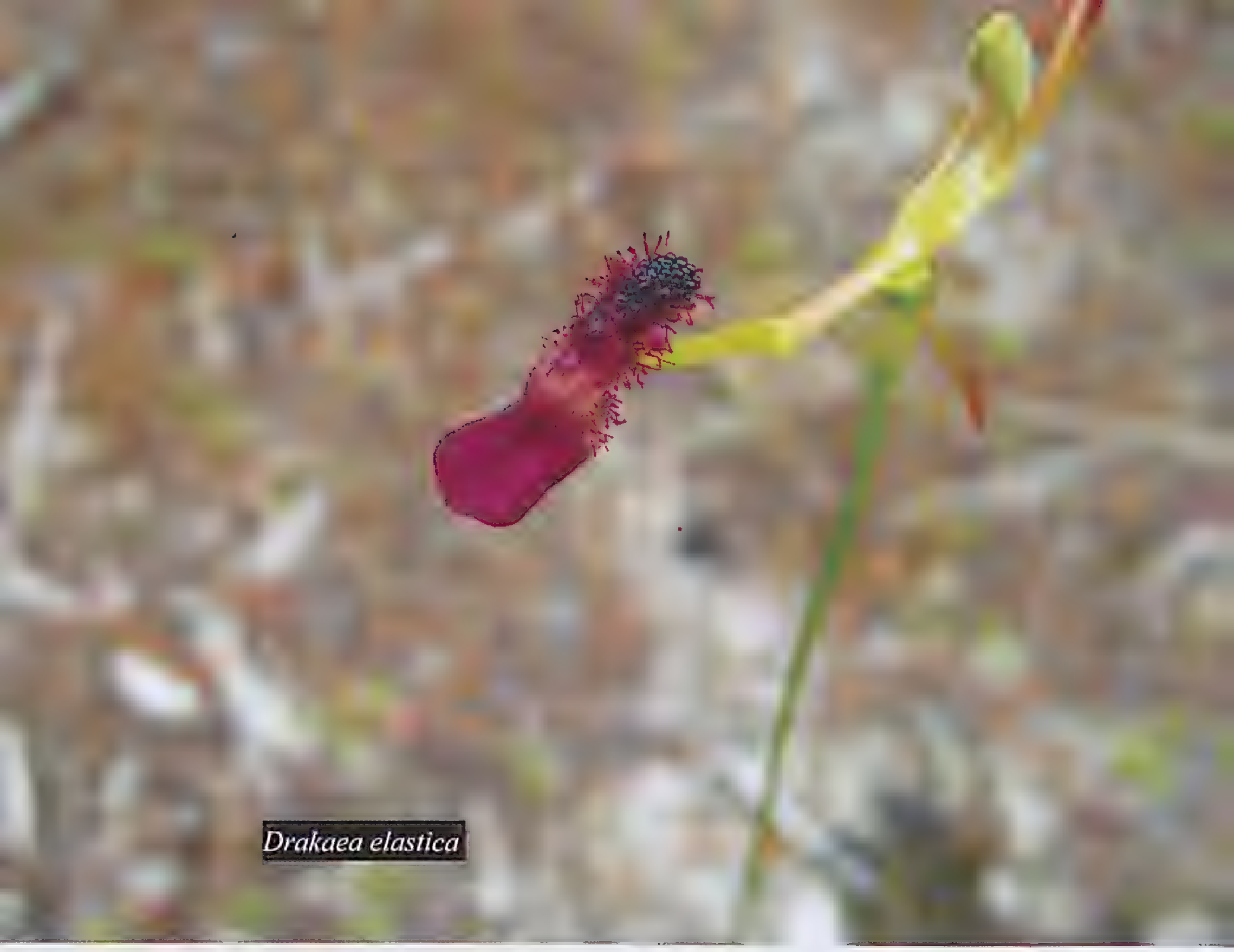
Miss Sarah Anne Drake was born in 1803 in Skeyton, Norfolk, and was a childhood friend of Anne Lindley, wife of botanist John Lindley. In 1830 Miss Drake moved into the Lindley home in London and lived with the family until 1847. Soon after she joined the household, Lindley started training Miss Drake – 'Ducky', as she was known to the family –as a botanical artist. She became very accomplished and illustrated many of the images in Lindley's publications and also in other works including *Edwards's Botanical Register*. In 1840 Lindley named the genus *Drakaea* in her honour when describing the specimens collected by James Drummond in the Swan River Colony as a single species: *Drakaea elastica*.

A number of Australian terrestrial orchid species have extremely interesting pollination biology that involves a complex relationship between the orchid and an insect. Many orchid species attract their pollinators by offering them food, or something that looks like food, but some of our terrestrial species attract their pollinators by offering them sex. I understand the only orchid genus outside of Australasia that has been confirmed to employ sexual deception is the bee-pollinated *Ophrys* of Europe. In orchids that employ sexual deception, the orchid mimics a female of the species of pollinator insect so convincingly– by its appearance and/or by emitting pheromones that are the same as those emitted by the female – that it deceives the male into believing he has found a mate. In the extreme cases, where the orchid labellum looks like a female insect, the male attempts to copulate with the orchid. Several Australian orchid genera and some New Zealand *Pterostylis* engage in some degree of sexually deceptive conduct. *Cryptostylis* and *Chiloglottis* have their own fascinating pseudocopulation stories, but the species I find most interesting are those with hinged labellums: *Arthrochilus, Spiculaea, Caleana, Paracaleana* and *Drakaea*, and a couple of caladenias. I consider that the drakaeas of Western Australia have made sexual deception an art form.

Drakaea elastica (the glossy-leafed hammer orchid) is listed as Endangered under the Commonwealth *Environment Protection and*



Drakaea glyptodon



Drakaea elastica

Biodiversity Conservation Act 1999, and as Critically Endangered under the Western Australian legislation. Each of the ten or so species of *Drakaea* is pollinated by a different species of Thynnid wasp. Female Thynnid wasps spend most of their lives underground. They are flightless, and rely on males to take them to a food source. In spring the female emerges from the ground and climbs up a grass stem or low shrub and waits for a male to collect her. The female emits pheromones which attract a male, which flies in and grabs the female and flies off with her to a food plant. The females have a curious feeding routine, which seems to involve feeding through the body of the male in a manner I am not sure I want to understand. The male copulates with the female during the flight. After dinner, the male returns the female to where he found her, then she proceeds underground to lay her eggs in scarab beetle larvae.

Conveniently for the orchids, the male wasps emerge before the females – maybe as much as a few weeks - so in all that time there are males flying around but no females for them to court. In this period the drakaeas are flowering. *Drakaea* labellums look like female thynnid wasps and they emit the same pheromones as the wasps. So the male smells what he thinks is a female, flies towards the scent, and spies what looks to him like a female wasp. He then grabs 'her' and tries to fly away. When he tries to fly away the hinged labellum he is grasping causes him to knock against the column of the flower repeatedly, dislodging the pollen, which sticks to his hairy back. When he eventually realises something is amiss he drops the labellum and flies off, to repeat the procedure with the next 'female' he grabs, this time depositing the pollen and completing the cycle.

Ths remarkable process involving a species of *Drakaea* and its wasp pollinator was recorded for a 1981 Oxford Scientific Films project: *Sexual Encounters of the Floral Kind*, which can be found on YouTube.

Drakaea elastica is known from 42 locations with a total population size of about 230 plants. The main threats to the species are human-related. An extensive recovery plan was published in 2009 and it sets out all the requirements for the orchid's survival, the threats it faces, and other relevant material. The orchids need the wasps to survive, and the wasps need an abundant food source and also the presence of a particular scarab beetle to parasitise to complete their life cycle. Giving effect to the recovery plan is likely to be a time-consuming, expensive and long-term process, but how can we sit back and allow something as remarkable as this orchid to slip away just because conserving it is likely to be expensive and may fail?

Luckily for this species the Australian government agrees that it should be protected and has given it priority. It was selected as one of the four orchids warranting inclusion in the '30 Plants by 2020' program under the Threatened Species Strategy which was launched in July 2015. The strategy sets out an action-based approach to protecting and recovering our threatened species. The object of the program is to improve the trajectories of the 30 selected species by 2020. Actions planned for this species are weeding, fencing populations, collecting seed and associated fungus, hand-pollinating, and ensuring habitat required by the wasp is intact and protected from *Phytophthora* impact.

The other three orchid species in the program are all Critically Endangered: Queensland's *Oberonia attenuata* (Mossman fairy orchid), and *Thelymitra cyanapicata* (blue top sun-orchid) and *Prasophyllum murfetii* (Fleurieu leek orchid), both from South Australia. The 30 plants were only added to the plan in September 2016 but hopefully the Threatened Species Commissioner's third report to the Minister for the Environment in December 2017 will report progress with the actions being taken for the protection of these species.

Acknowledgements

Thanks to Peter Eygelshoven for use of his photographs of *Drakaea*.

Roslyn Capell is the ANOS Inc. Conservation Officer.

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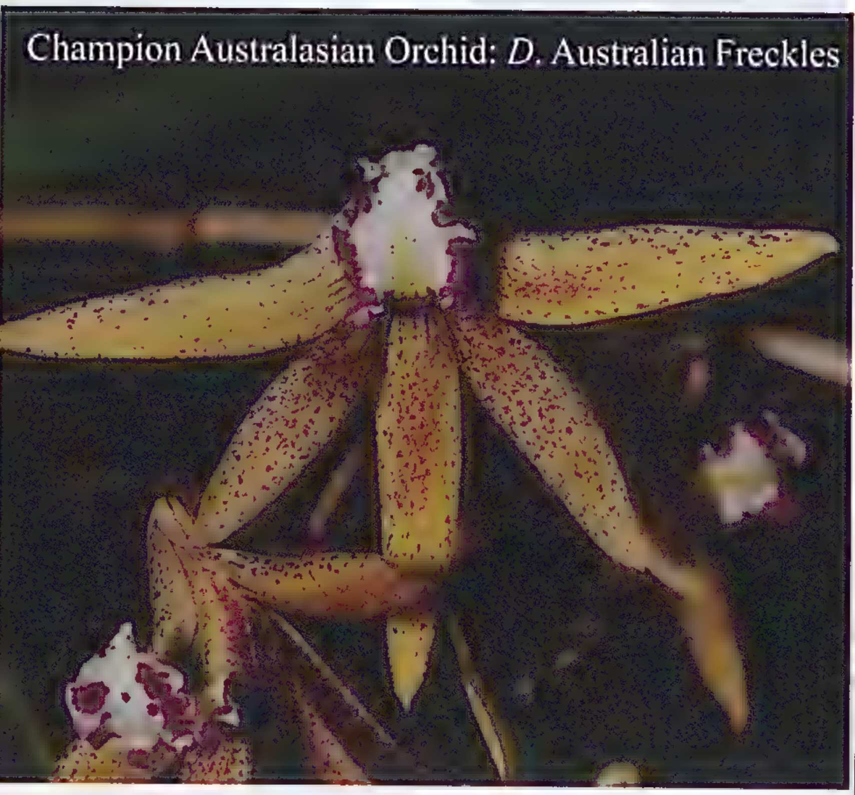
ANOS Far North Coast Group Spring Show Report 2016

Text and photographs by Roslyn Capell
capell666@ozemail.com.au

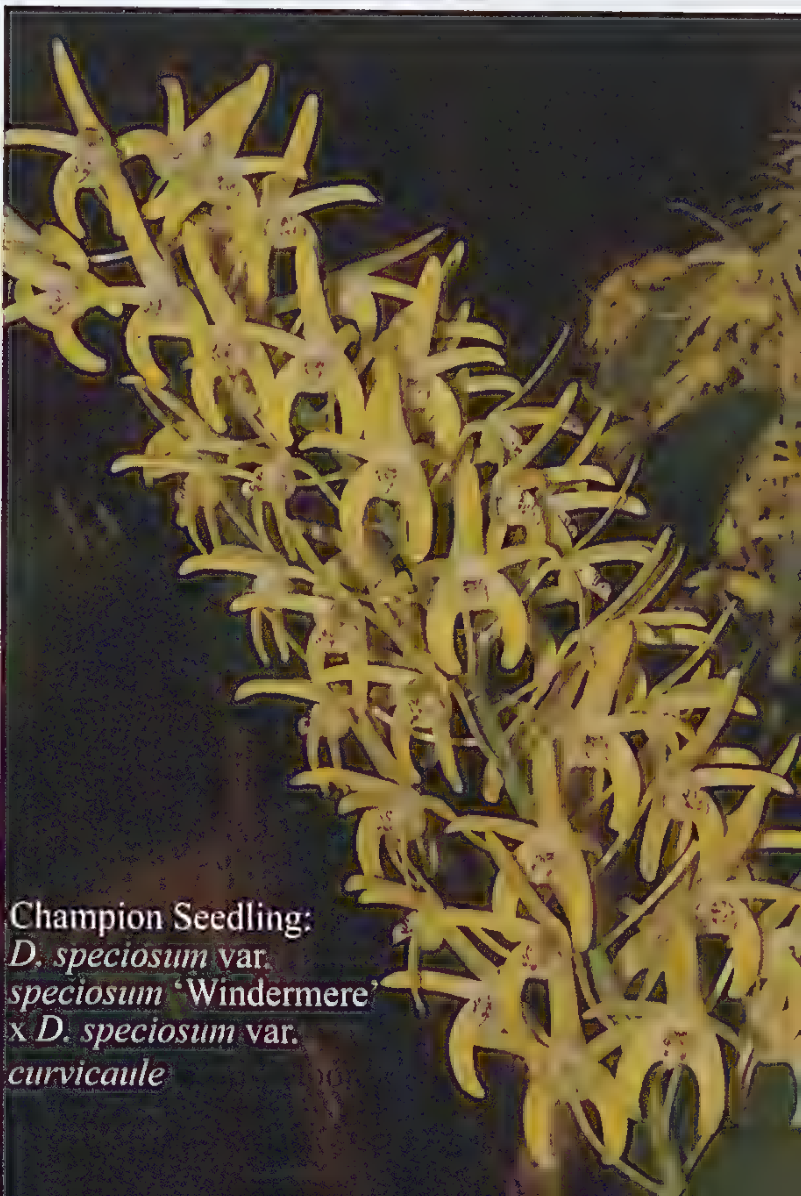
The Group was very pleased to be able to hold this year's show back at Ballina Fair. This busy shopping centre is an excellent venue. The show was well supported by members and friends and received enthusiastic feedback from the public. Our regular visitors found us and the sales table was popular and well patronised.

For a change, Grand Champion this year was the Champion Australasian orchid: Kathy Ubrihien's well grown and flowered *Dendrobium* Australian Freckles, which is the primary hybrid between the Australian species *D. schoeninum* and the New Guinea species *D. fuliginosum*. Kathy purchased the plant from the Australian Orchid Nursery about four years ago as a little seedling in a 50mm tube. When it was small she potted it into the tree fern basket in which it still grows. It hangs in the shadehouse protected by 50% shade cloth on walls and roof. It receives fairly bright light but does get additional shade from a large nearby tree. During the growth period Kathy and Tony water their native and Australasian dendrobiums every couple of days and fertilise every week or two using a fertiliser regime which alternates various organic and chemical fertilisers. They use either "growth" or "flowering" products which have different NPK ratios, as appropriate, and also calcium nitrate and seaweed based fertilisers. During the rest period the plants receive small amounts of water and fertiliser as considered necessary depending on the conditions, and the roof is covered with plastic during winter. This plant has definitely responded to this treatment regime and grown very well over the last four years.


Champion Australasian Orchid: *D.* Australian Freckles

Champion Species and Reserve Champion of the Show was Bevan Burnham's *Dendrobium speciosum* var. *curvicaule* ('Misty Mountain' x 'Daylight Moon'), and Bevan's *D. speciosum* var. *speciosum* 'Windermere' x *D. speciosum* var. *curvicaule* 'Blew Moon' was Champion Seedling.

President Tony Trigger won Champion Hybrid with a very attractively coloured and well-flowered *Dendrobium* hybrid. Unfortunately I did not photograph its label and Tony has divided it since then so it does not look the same, he cannot remember which plant was the winner, and the name was not recorded, so I cannot report its identity. A lesson learned by all for the next show! Tony also won Best Specimen with a well grown and flowered *D. speciosum* var. *capricornicum* 'Morrie' x self.


Champion Seedling:
D. speciosum var. *speciosum* 'Windermere' x *D. speciosum* var. *curvicaule*

ANOS Newcastle Spring Spectacular 2016

Text by Anthony Lowe
ajldsign@bigpond.net.au
Photographs by Phillip Radford

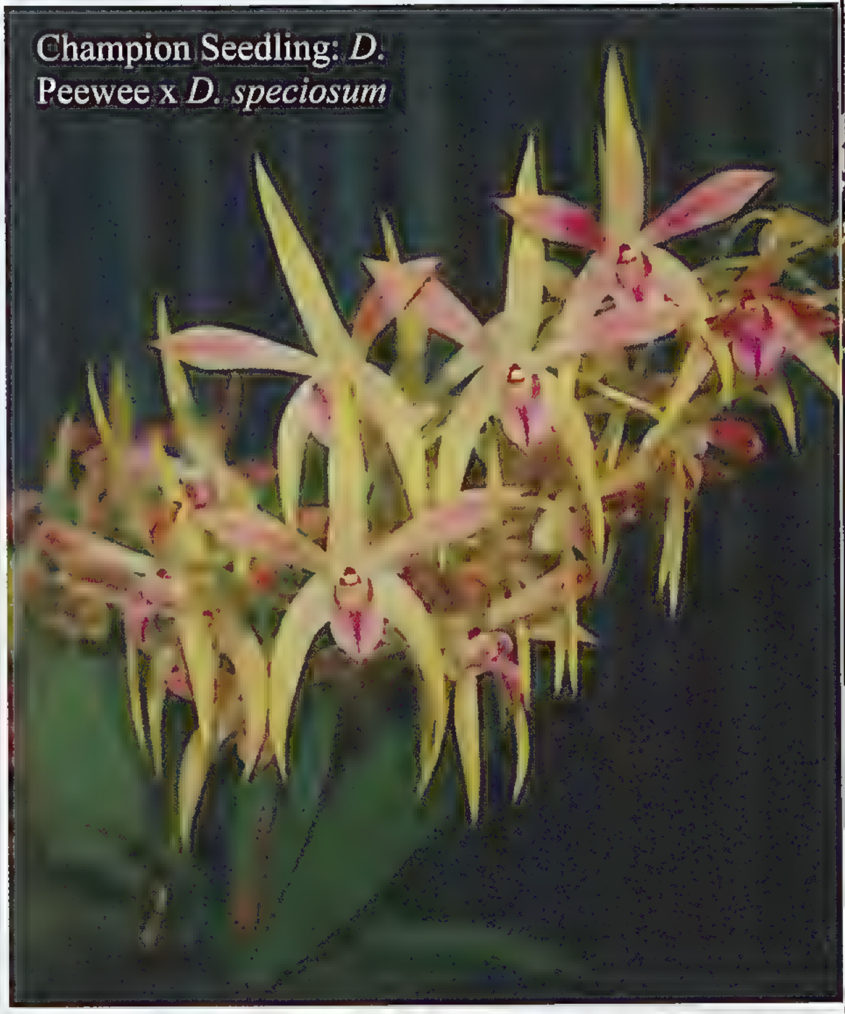
Love, care and some pride come to the fore in spring, with the majority of native orchids starting to show their best. From time to time we often experience the difficulty in finding a suitable venue for a show of this size, but this year we were very appreciative of the support we received from the management and staff of the Windale-Gateshead Bowling Club. The show proved very successful for both groups.

The setup and judging seemingly ran like clockwork, which took the stress out of the morning for most. Entering the hall and at a glance the display looked fantastic, row after row of beautifully grown orchids. Notably missing this year were the long benches of *Dendrobium speciosum*. There were certainly a good total number of plants to look over, but down in numbers from previous years, 169 plants in all.

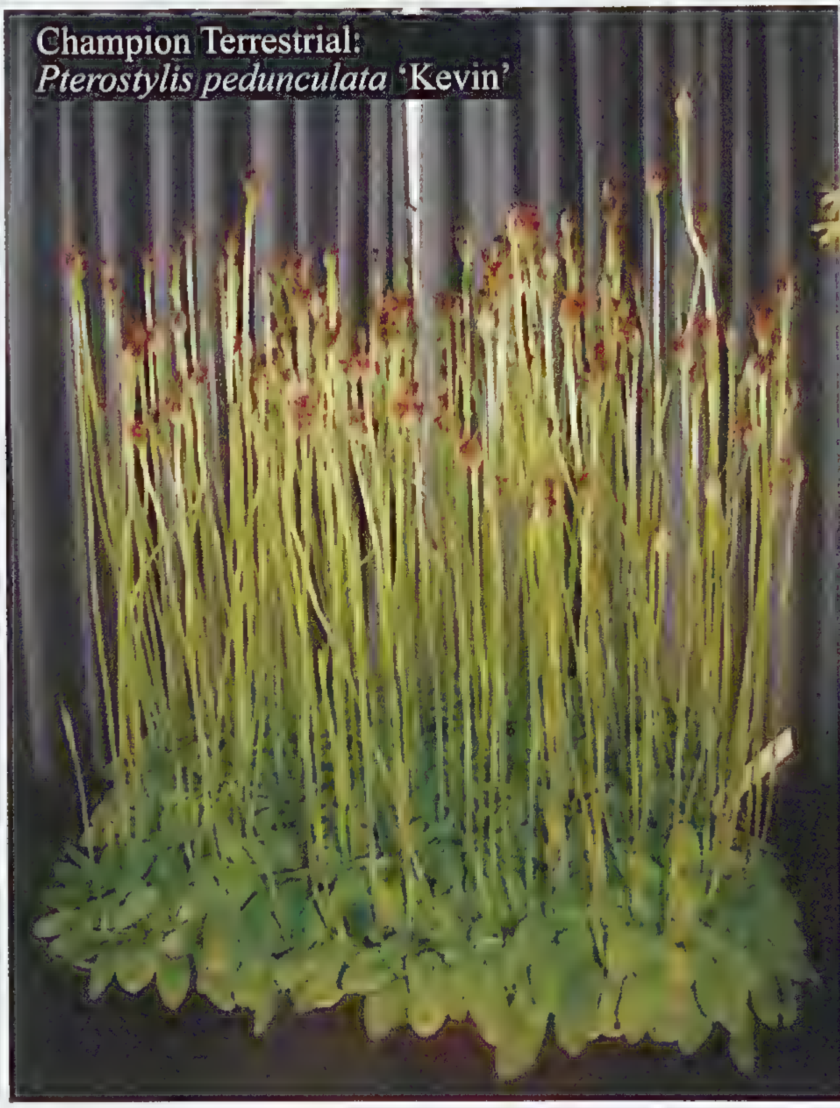
In the absence of speciosums, plants in other sections particularly the teretes and *Dendrobium* hybrids more than capably complimented the display. A terete hybrid grown by Grahame Young and Callyn Farrell took out Champion Australasian and Grand Champion, *Dendrobium* Jiggi 'Best Blue', a superbly grown and shown plant. Graham Miller won Champion Hybrid and Reserve Champion with his plant of *D*. Cobber 'Yes Please' x *D*. Australian Rose Beauty, while Phillip and Sandra Radford took Champion Speciosum with *D. speciosum var curvicaule* 'Winsome'. Champion Seedling was awarded to Kevin Bull for *D*. Peewee x *D. speciosum*, and Champion Novice was Carol Wenham with *D*. Avril's Gold.

Another pot that bears special mention belonged to Kevin and Shirley Hilton. *Pterostylis pedunculata* 'Kevin' was incredible in its presentation and culture, taking out Champion Terrestrial with a pot of over 200 flowers. Later this display was awarded ACC/ANOS.

There was something for everyone, with good numbers of visitors keen to see the display. ANOS Newcastle Committee and Members extend our appreciation to the ANOS judges for their dedication and time, along with the member of the Newcastle Group.



Champion Seedling: *D.* Peewee x *D. speciosum*



Champion Terrestrial: *Pterostylis pedunculata* 'Kevin'

Vale Robert Stanley Murch

Dave Groffen and Tony Clarke

Robert Stanley Murch passed away peacefully at Greenwich Hospital on 1st February 2017 at the age of 69. He is remembered by his soulmate Tony and the family of his late brother Phillip. Rob enjoyed growing orchids, ten-pin bowling and was deeply interested in bonsai, having travelled to Singapore and Japan to attend bonsai shows and conferences. Rob became treasurer of ANOS Inc in 2001 and held that job until 2011.

During that time he maintained stocks of conference proceedings, badges, medallions, prints etc. and manned stands at conferences and shows to sell these products and promote ANOS. Rob was also treasurer for The Ira Butler Trophy Committee and ANOS Warringah Group. His tireless efforts for ANOS Inc. for ten years led to his nomination for life membership, approved unanimously at the 2012 ANOS Inc. AGM.

In 2011 Robert went through rigorous training for several years to become an ANOS Judge with the NSW ANOS panel, which he achieved in August 2015. Robert was a gentle person, a kind and helpful man always with a ready smile. He will be missed by all who knew him.

Robert Murch

The 15th Annual Mingara Orchid Fair & Show incorporating ANOS Central Coast Group

will be held on:

Saturday 24th of June 2017 between 9am to 5pm &
Sunday 25th June 2017 between 9am to 3pm
at the Mingara Recreation Club, Mingara Drive, Tumbi Umbi.

For details contact Steve Dunstan mingaraorchidclub@gmail.com or follow ANOS Central Coast Group on facebook..

Comments on Recently Awarded Plants

Comments have been provided by Queensland and Victorian ANOS judging panel members and growers. Photographs are published in the December 2016 and March 2017 issues of *The Orchadian.*

Award No. 232 *Dendrobium* Avril's Gold 'MD' HCC/ANOS 2016 (VIC) 77.3 pts.

The plant is owned by Michael Drobski, and this highly awarded cross was registered by R. Clement in 1998. The parents are *D.* Aussie Child (*D.* Hilda Poxon x *D.* Aussie Spectrum) and *D. speciosum.* The influences of the parents are evident in the shape and flower colourwhile the growth habit follows *D. speciosum.* The plant is compact and very floriferous with strong and long arching racemes.The flowers have excellent shape, are well presented, and the petals are proportioned and balanced. The rich bright yellow with variable amounts of red-purple toward the centre is attractive, with less red than some of the other awarded seedlings of this cross. Long distance travel to the judging made it hard for the grower to present the plant at its optimum. This was the first plant awarded by the Victorian ANOS judging panel.

Kim Lam

Award No. 233 *Dendrobium* Asternova Snow Drop 'Kathy'AM/ANOS 2016 (QLD) 80.8 pts

The champion orchid at the 2016 Eastern District Orchid Society's April autumn showwas *D.* Asternova Snow Flake x *D.* Burbank Sweet, registered by Ann Sales in 2012.This complex *Dendrobium* sect. *Phalaenanthe* hybrid contains *D. bigibbum, D. phalaenopsis, D. lineale, D. stratiotes, D. gouldii* and *D. tokai.* It was judged by the appreciation method as per the judging rules at the time as the orchid is an Australasian hybrid (i.e. contains non-Australian species in parentage). The outstanding features were the habit of inflorescence and the colour and shape of the flowers.

The plant had 59 flowers and one bud on four inflorescences, one on each pseudobulb. The inflorescences were arching with the flowers being displayed evenly without excessive overlapping. The flowers were glistening white with a bright "red" contrasting centre. They were flat, rounded and filled-in without excessive reflexing of the petal ends.

David James

Award No. 234 *Pterostylis pedunculata* 'Kevin' ACC/ANOS 2016 (NSW) 82.57 pts

It is always a pleasure to see a very well grown large pot of colony forming terrestrials, and to reward it accordingly. The Hiltons' exhibit was much admired at the ANOS Conference at Kempsey. The 204 flowers were very even in height and similar in appearance, and most were fresh and presenting well despite travel to the show. The small number of pollinated flowers detracted very little and did not attract a significant points penalty because of the overall quality of the exhibit. The judging panel encourages growers to grow and exhibit more terrestrials. (see photo back cover)

Sheryl Lawson

Award No. 236 *Dendrobium speciosum* var. *curvicaule* 'Palmerston Mist Olive' HCC/ ANOS 2016 (NSW) 77.44 pts

A seedling of the intra-varietal cross 'Palmerston' x 'Misty Mountain', which produced a number of excellent results for Ted Walmsley. The cross was an unusual and slow grower, with open and somewhat straggly growth which did not create the desirable urn shape seen in many var. *curvicaule.* The display was beautifully presented, with three long racemes (total of 270 flowers) gently arching in the same direction.Flower shape was excellent with heavy substance of a yellow colour, fading to white in the centre. Crossings within this variety may not improve on some of the most spectacular natural specimens but this one had some superior features.

Ted Walmsley

Award No. 237 *Dendrobium tetragonum* 'Jess' HCC/ANOS 2016 (NSW) 79.38 pts

A beautifully flowered specimen that just missed out by a whisker on an AM/ANOS. See David Butler's story in this issue.

Award No. 238 *Dendrobium* Rainbow Glow 'Koori' AD/ANOS 2016 (NSW)

This plant received an award at the 2016 ANOS Conference. It was given to me as a seedling by Charlie Smith, a well known Hunter Valley hobby hybridizer. It is a hot/cold hybrid and used *D.* Anne's Rainbow Surprise and *D.* Sunglow 'KWR' (6.2% *D. bigibbum*). The very dark colour and light contrasting 'eye' are the prominent features of the flower.

Henk van den Berg

Award No. 239 *Dendrobium* Class 'Windsor Downs' ACC/ANOS 2016 (NSW) 81.3 pts

Award No. 240 HCC/ANOS 2016 (NSW) 79.9

This plant was awarded at the 2016 ANOS Conference and Show at Kempsey. It is a hot/cold hybrid between *D.* × *delicatum* 'Tracy' and *D.* Lorikeet 'Mel'. The pod parent *D.* × *delicatum* was provided by Bernie Fletcher, *D. Lorikeet* by David Butler. This duo made some fabulous crosses in their heyday and both have been prominent winners around Sydney shows. To this day, Dave is considered a master hybridiser and shower of *Sarcochilus*, and Bernie has re-invented himself as a hybridiser of *Dendrobium.*

I purchased this plant as a piece of an advanced plant from leading Hunter Valley grower Don Cruickshanks. As a hot/cold it is easy to grow. Again I keep it tight in the pot to get the best results for a prolific flowering. The flower is dark pink with a very distinctive white 'eye'. A sister seedling *D.* Class 'Pauline' is a prominent show winner of award quality. *Dendrobium* Touch of Class is a follow-on hybrid of *D.* Class 'Windsor Downs' x *D.* Ray's Spot 'Superb' and is very desirable to have in one's collection.

Henk van den Berg

Award No. 242 *Dendrobium* Bardo Rose 'Super' HCC/ANOS 2016 (NSW) 78.2 pts.

Award No. 241 ACC/ANOS 2016 (NSW) 76.9 pts.

This plant was bought as an advanced seedling from Ken Russell at Dungog. It is a primary hybrid between *D. kingianum* and *D. falcorostrum.* It would be interesting to know the parents used as it is a compact dwarf-growing plant. The flower shape is typical and the colour is pink flush. It flowers in abundance every year.

Henk van den Berg.

Award No. 243 *Dendrobium* Awespot 'Ang' ACC/ANOS 2016 (NSW) 76.4 pts.

Awarded at the ANOS 2016 Conference and Show at Kempsey. It was purchased as a seedling from DUNO and is a hot/cold hybrid of *D.* Awesome and *D.* Rutherford Sunspot (flowers provided by me). It is a nice specimen plant and easy to grow, kept under 50% shade cloth and under solid solar weave from May to September to control the watering.

Henk van den Berg

Award No. 244 *Dendrobium* Esme Poulton 'Gordon' ACC/ANOS 2016 (NSW) 81.4 pts.

This is a primary hot/cold hybrid between *D. bigibbum* and *D. kingianum.* It was bred by Gordon Young from Ballina two decades ago. He was a very prominent grower and hybridizer in the North Coast area. This plant flowers very well for me every year. It is considered a 'ladies' plant because it is much admired by women for its flower count and the gentle variation of soft pink colour.

I grow it as a cold hybrid, and tend to keep it tight in the pot (don't overpot). I use Peters fertilizer and 'cow manure tea'. It is kept under 50% shadecloth. Mericlones of the plant under the name 'Tinonee' are available, and the plant is well worth growing in your collection.

Henk van den Berg

Award No. 245 *Dendrobium* Binh Ba 'Exotic' HCC/ANOS 2016 (NSW) 77.9 pts.

Awarded at the ANOS 2016 Conference and Show, and purchased as a seedling from DUNO. It is a cross between *D.* Tangeloats and *D.* Aussie Victory. The flower is well balanced and the purple/white colour is somewhat unique.

Henk van den Berg

Award No. 246 *Dendrobium speciosum* var. *curvicaule* 'Possum' ACC/ANOS 2016 (NSW) 79 pts

Amagnificently flowered plant with 19 inflorescences and approximately 1660 flowers.

Flowers were yellow with a pale centre. This was a fine effort to both flower and bring to the show in such good condition. Well worthy of a cultural award.

Sheryl Lawson

Award No. 247 *Dendrobium tetragonum* 'Orange Glow' ACC/ANOS 2016 (NSW) 83.2 pts

This large specimen plant grown by Ray Clement displayed 211 flowers on 42 racemes, literally covered with flowers, highly admired at the show and well deserved the cultural award.

Sheryl Lawson

Award No. 248 *Dendrobium* Delicate Bride 'Genesis' ACC/ANOS 2016 (NSW) 78.9 pts

The parentage is *D.* Burgundy Bride 'Melbourne' x *D.* × *delicatum* 'Tracy'. We purchased this plant from Don Cruickshanks as a seedling in 2006 and this year it had 43 racemes and over 700 flowers and buds presenting evenly above the leaves on a robust well grown plant. The cream flowers have consistent shape and spots of purple, and a lovely speckled purple labellum, making a striking specimen. It produces a spectacular display of flowers every spring and for that reason it will remain in our collection.

Callyn Farrell, DUNO and Elermore Orchids

Award No. 249 *Dendrobium* Lauren 'Holly Chief' ACC/ANOS 2016 (NSW) 81.7 pts

The parentage is *D.* Rosemary Jupp 'Chris' x *D.* Aussie Phil and it was bred by Brian Gerhard, previous owner of Down Under Native Orchids. We purchased this division in 2010. In 2015 it was Reserve Champion Hybrid at the 2015 Kempsey Speciosum Spectacular and received HCC/ANOS andHCC/AOC. In 2016 it produced more and larger flowers. At the 2016 ANOS Conference and Show it was awarded ACC/ANOS. It was also awarded AM/AOC. Interestingly, the pod parent of *D.* Lauren is also the parent of *D.* Grey Ghost 'Tumbi' AM/ANOS 2006 (NSW). We believe *D.* Lauren 'Holly Chief'will prove its potential as a parent in our breeding program. It has a consistent and superior shape with petals well aligned with the sepals and a striking large purple ruffled labellum and the flowers display well.

Callyn Farrell, DUNO and Elermore Orchids

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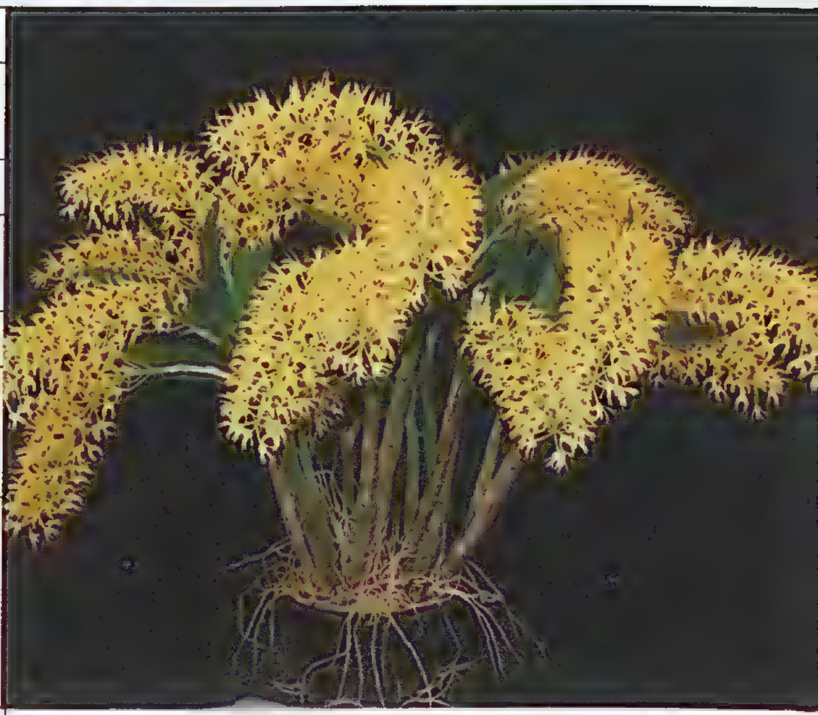
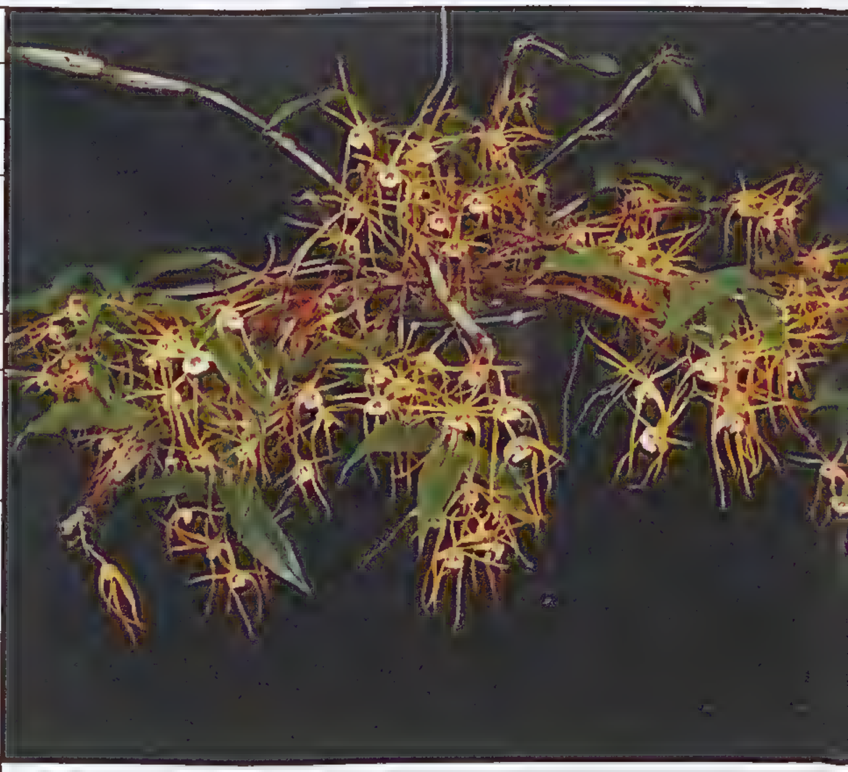
#246 ***Dendrobium speciosum var. curvicaule*** **'Possum' ACC/ANOS 2016**

Points	79.0
Owner	Thompson, R. & Chedzey, M.
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of: flowers inflorescences	 1,667 19
Measurements(mm): flower across vertical petal sepal dorsal labellum raceme avge length	 650
Detailed avge points:	



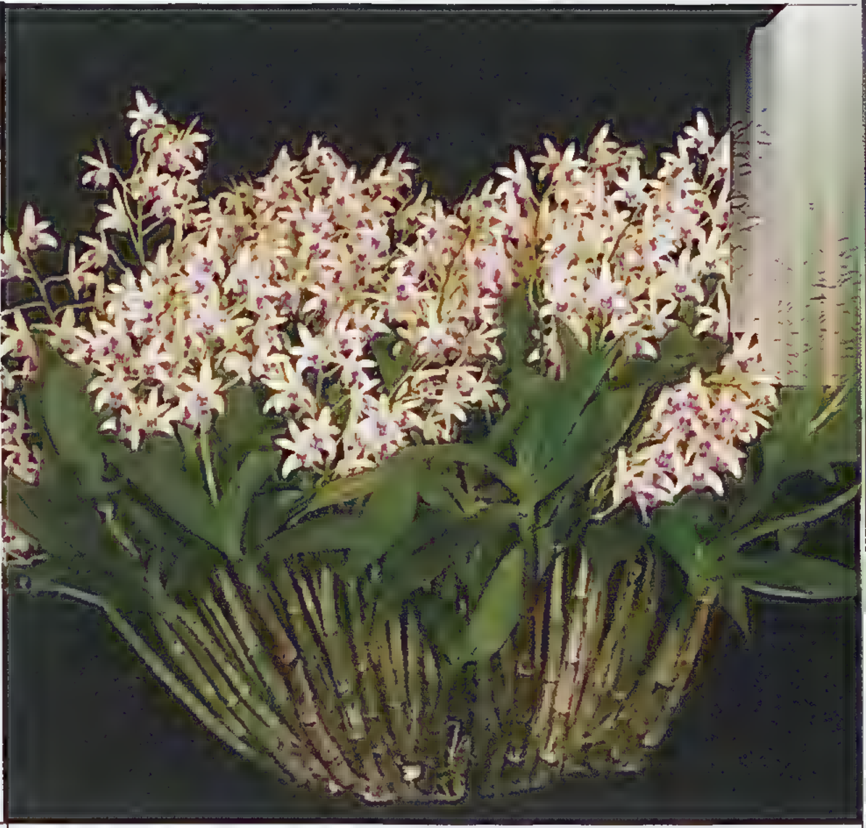
#247 ***Dendrobium tetragonum*** **'Orange Glow' ACC/ANOS 2016**

Points	83.2
Owner	Ray Clement
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	
Number of: flowers inflorescences	 211 42
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	 80
Detailed avge points:	



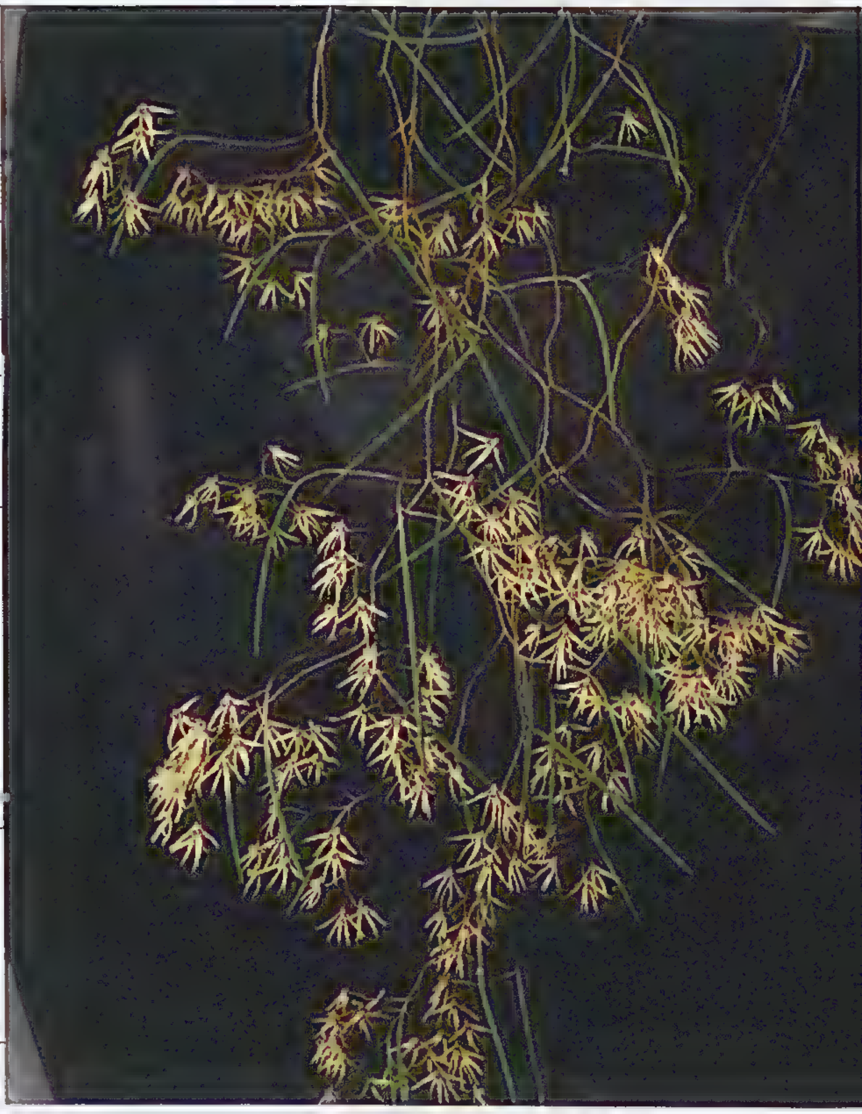
#248 ***Dendrobium*** **Delicate Bride 'Genesis' ACC/ANOS 2016**

Points	78.9
Owner	DUNO & Elermore Orchids
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of: flowers inflorescences	 647 43
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	 210
Detailed avge points:	



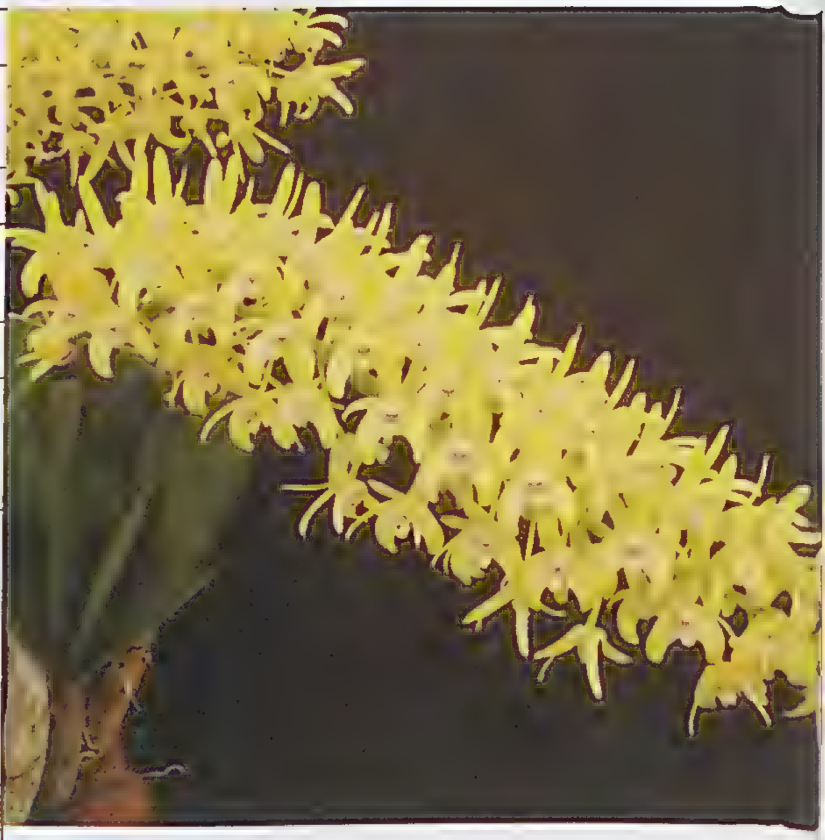
#249 ***Dendrobium*** **Lauren 'Holly Chief' ACC/ANOS 2016**

Points	81.7
Owner	DUNO & Elermore Orchids
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of: flowers inflorescences	 238 51
Measurements(mm): flower across vertical petal sepal dorsal labellum inflorescence length	 110
Detailed avge points:	



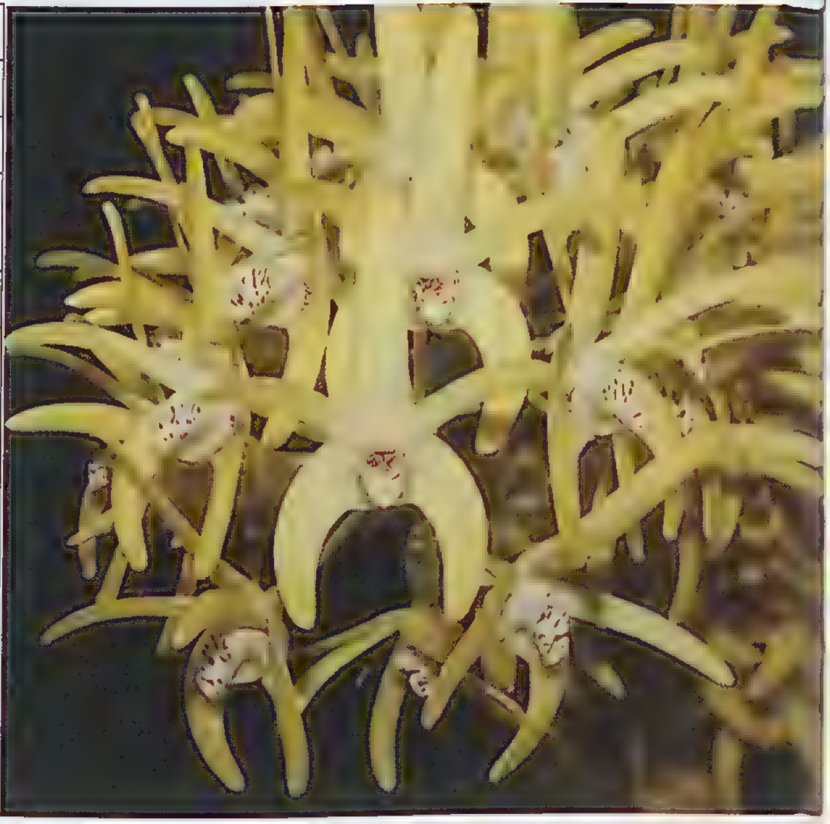
#250 Dendrobium speciosum 'Dave' HCC/ANOS 2016

Points	77.4
Owner	Walmsley, Ted & Winsome
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of:	
flowers	273
inflorescences	4
Measurements(mm):	
flower across	25
vertical	38
petal	24L 3W
sepal	20L 8W
dorsal	25L 6W
labellum	9L 5W
inflorescence length	400
Detailed avge points:	
shape(25)	19.3
colour(20)	16.4
size(15)	11.5
substance/texture(10)	8.0
floriferousness(15)	10.2
habit/attractive(15)	12.0



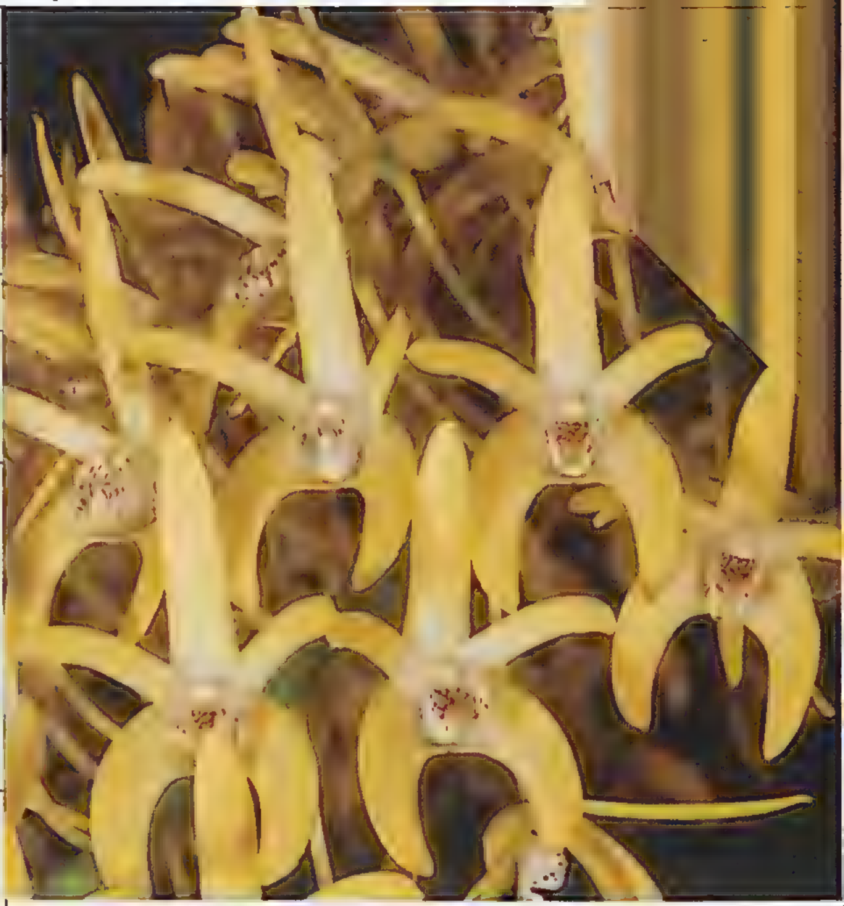
#251 Dendrobium speciosum 'Zoe' HCC/ANOS 2016

Points	79.5
Owner	Lloyd Edwards
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of:	
flowers	485
number of buds	
inflorescences	5
Measurements(mm):	
flower across	38
vertical	58
petal	27L 4W
sepal	27L 7W
dorsal	30L 7W
labellum	10L 6W
inflorescence length	500
Detailed avge points:	
shape(25)	20.3
colour(20)	15.9
size(15)	11.9
substance/texture(10)	7.6
floriferousness(15)	11.7
habit/attractive(15)	12.1



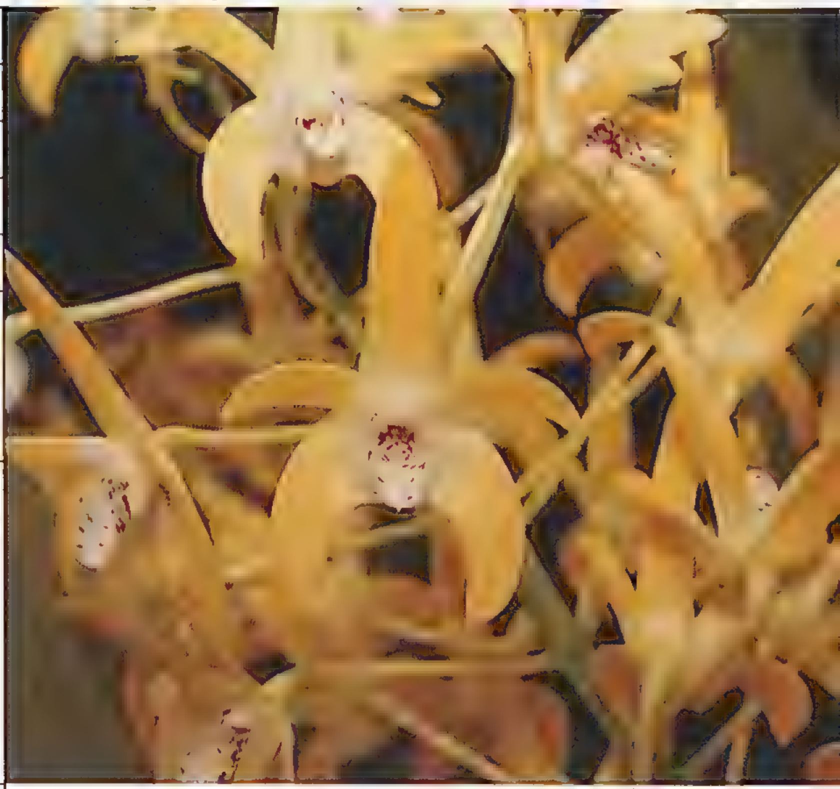
*#252 **Dendrobium speciosum*** **'Melva's Gold' HCC/ANOS 2016**

Points	76.6
Owner	Davis Hemmings
Date	4 Sep 2016
Event	8th ANOS Conf. & Kempsey Spec.
Photos by	Bill Dobson
Number of:	
flowers	846
inflorescences	11
Measurements(mm):	
flower across	33
vertical	52
petal	25L 3.5W
sepal	25L 8W
dorsal	32L 7W
labellum	11L 6W
inflorescence length	550
Detailed avge points:	
shape(25)	18.86
colour(20)	15.86
size(15)	10.86
substance/texture(10)	7.35
floriferousness(15)	12.29
habit/attractive(15)	11.46



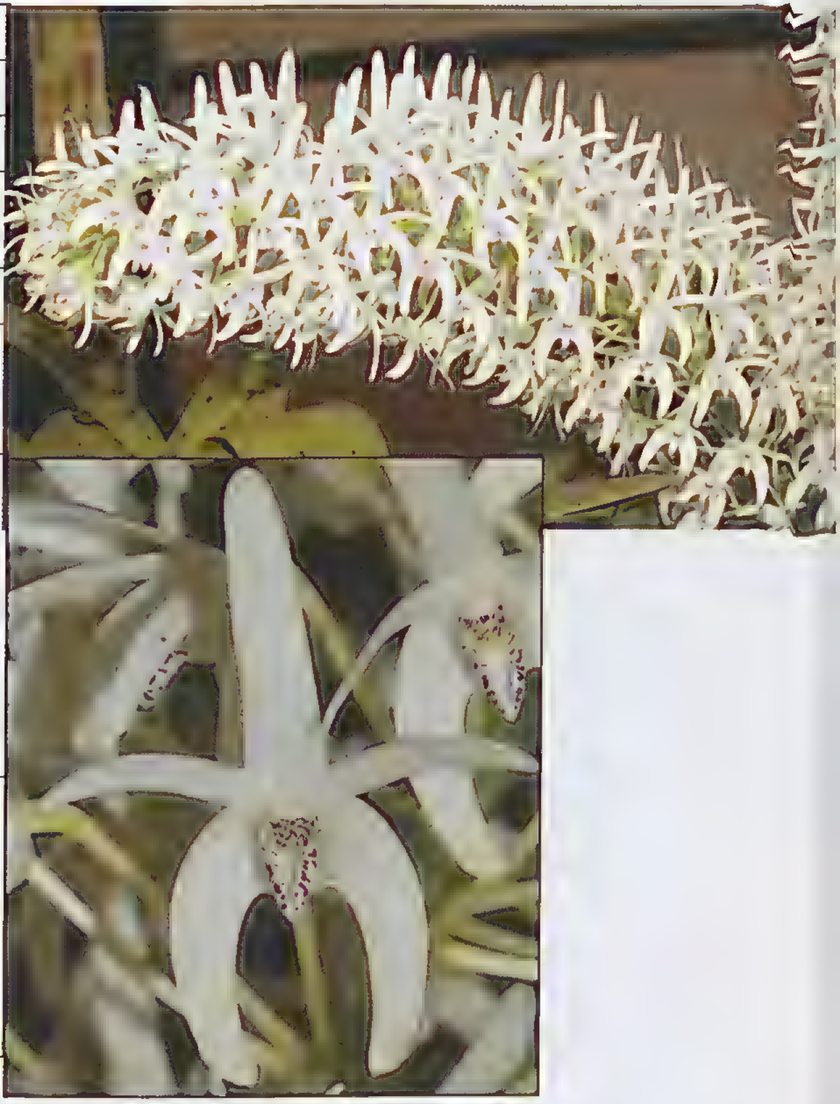
*#253 **Dendrobium*** **Dunokayla 'Stony' AM/ANOS 2016 (VIC)**

Points	81.1
Owner	Michael Drobski
Date	24 Sep 2016
Event	Melb. Suburbs Show
Photos by	David Adams
Number of:	
flowers	319
number of buds	
inflorescences	11
Measurements(mm):	
flower across	45
vertical	65
petal	29L 5W
sepal	28L 12W
dorsal	35L 9W
labellum	21L 6.5W
inflorescence length	450
Detailed avge points:	
shape(25)	20.8
colour(20)	15.8
size(15)	12.3
substance/texture(10)	8.3
floriferousness(15)	12.1
habit/attractive(15)	11.8



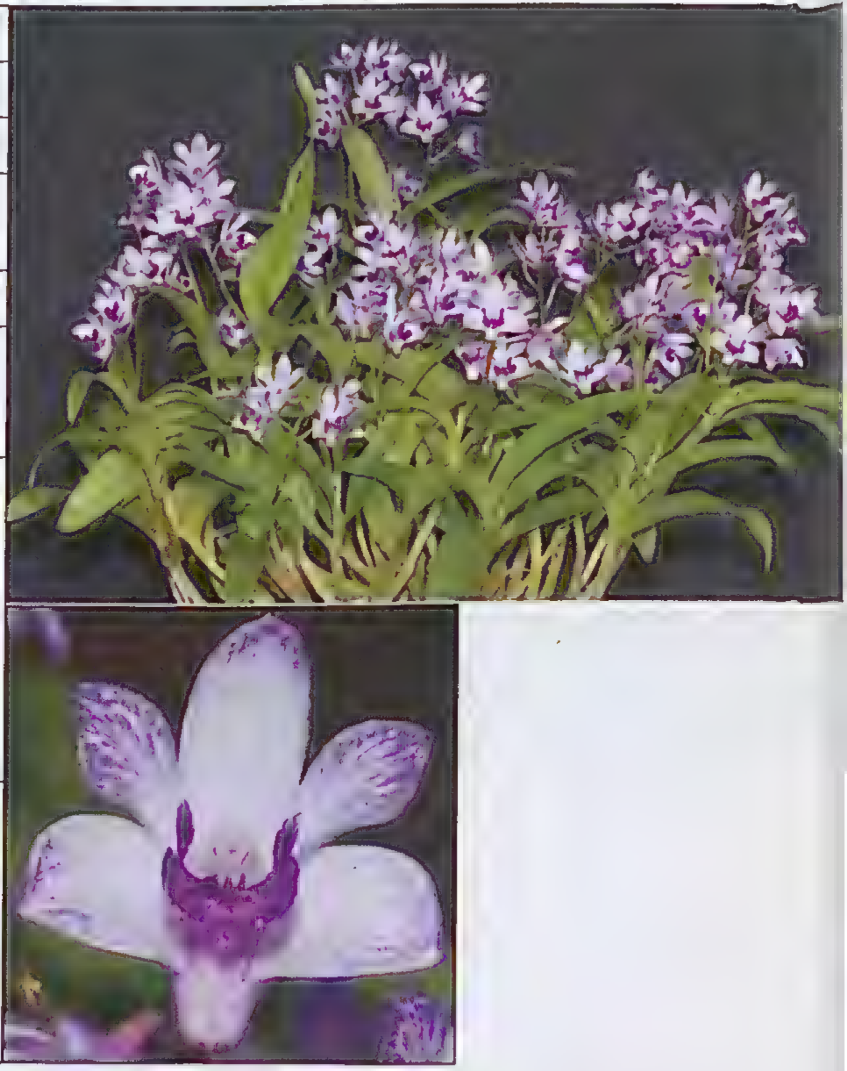
#255 *Dendrobium speciosum var. speciosum* 'National White' AM/ANOS 2016 (VIC)

Points	82.6
Owner	Peter & Sheryl Adams
Date	24 Sep 2016
Event	Melb. Suburbs Show
Photos by	Peter Adams
Number of:	
flowers	448
inflorescences	3
Measurements(mm):	
flower across	40
vertical	56
petal	27L 5W
sepal	27L 11W
dorsal	34L 7W
labellum	13L 4W
inflorescence length	570
Detailed avge points:	
shape(25)	21.0
colour(20)	16.7
size(15)	11.8
substance/texture(10)	8.0
floriferousness(15)	12.8
habit/attractive(15)	12.3



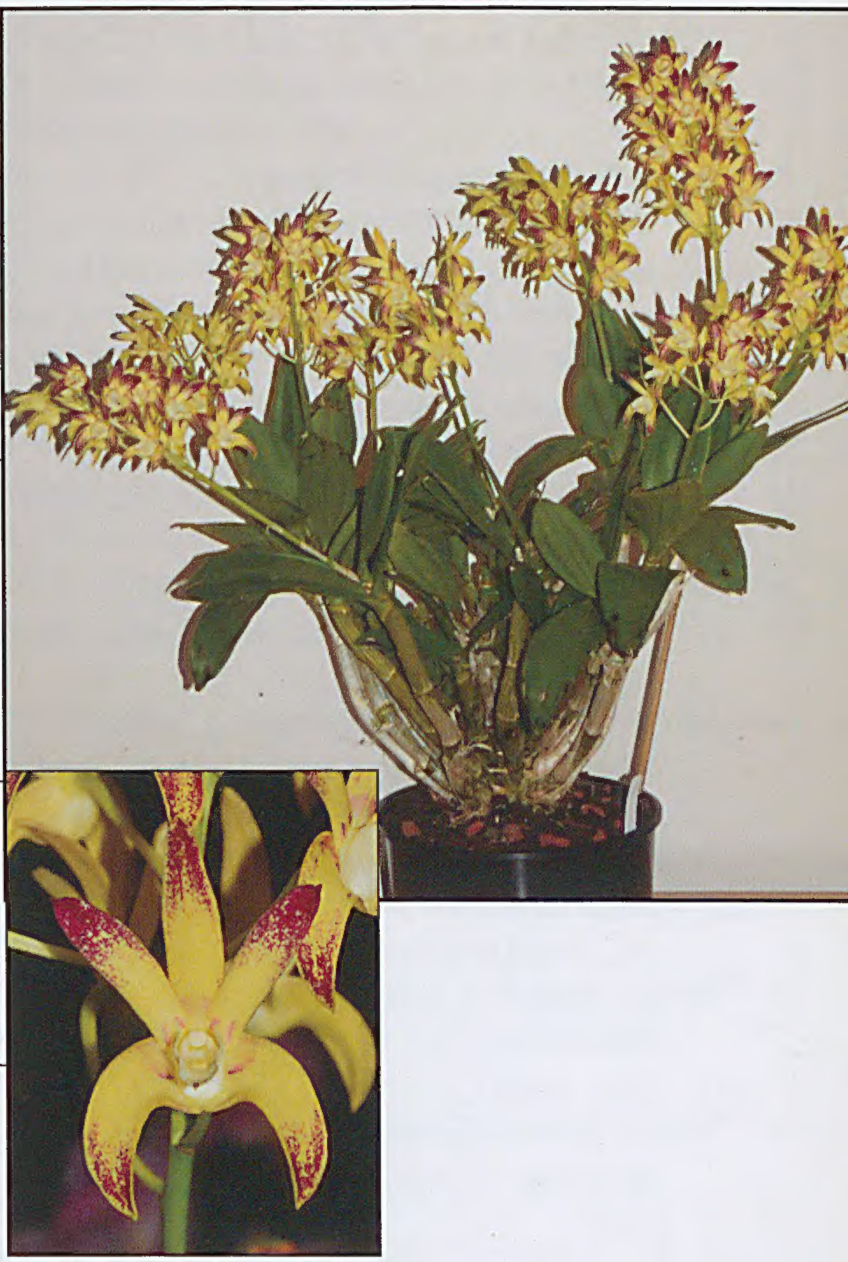
#256 *Dendrobium kingianum* 'Queen's Jewels' AM/ANOS 2016 (VIC)

Points	81.6
Owner	Peter & Sheryl Adams
Date	27 Oct 2016
Event	Melbourne Suburbs meeting
Photos by	Peter Adams
Number of:	
flowers	122
inflorescences	30
Measurements(mm):	
flower across	29
vertical	29
petal	15L 5W
sepal	12L 12W
dorsal	19.5L 8.5W
labellum	16L 10.5W
inflorescence length	150
Detailed avge points:	
shape(25)	20.6
colour(20)	16.8
size(15)	12.2
substance/texture(10)	8.0
floriferousness(15)	12.0
habit/attractive(15)	12.0



#254 *Dendrobium* Eclipse 'Annetta' AM/ANOS 2016 (VIC)

Points	81.9
Owner	Michael Drobski
Date	30 Sep 2016
Event	Special Judging
Photos by	David Adams
Number of:	
flowers	114
number of buds	
inflorescences	9
Measurements(mm):	
flower across	51
vertical	68
petal	34L 8W
sepal	30L 15W
dorsal	405L 14W
labellum	181L 7W
inflorescence length	365
Detailed avge points:	
shape(25)	20.5
colour(20)	16.3
size(15)	12.3
substance/texture(10)	8.3
floriferousness(15)	12.2
habit/attractive(15)	12.3



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- **ANOS Kabi Group Inc. Show**
  Weekend of 26th & 27th August 2017 Isabella Griffin Room Strathpine Community Centre 199 Gympie Road, Strathpine. Saturday 9am-5pm, Sunday 9am-2pm.
- **Dendrobium Speciosum Spectacular & Australasian Species & Hybrid Show Kempsey**
  Friday 1st September 2017 until Sunday 3rd , Kempsey Dirt Bike Track, Greenhill via Kempsey. Set up Friday 1st September(noon to 5pm) & Saturday 8am to 9am)
- **ANOS Illawarra Spring Show**
  Weekend of 9-10 September 2017 Old Courthouse, Cliff Road, Wollongong 2500, 9am to 4pm both days
- **ANOS Sydney Group Spring Show**
  Weekend of 9-10 September 2017 Eden Gardens (Pandorea Room) 301-307 Lane Cove Road, North Ryde 2113
- **ANOS Warringah Group Spring Show**
  Weekend of 9-10 September 2017 Forestville Memorial Hall, Starkey St., Forestville 2087 Sat. 9am to 4pm, Sun. 9am to 3pm.
- **ANOS Melbourne Suburbs Inc. Spring Show**
  Saturday 16th September 2016 Montrose Town Centre, 935 Mount Dandenong Tourist Rd, Montrose VIC 3765 Montrose VIC 3765, 10 am – 4 pm (Sales from 9.30 am)
- **ANOS Illawarra Late Spring Show**
  Weekend of 14-15 October 2017 Old Courthouse, Cliff Road, Wollongong 2500., 9am to 4pm both days.
- **ANOS Sydney Group Sarcochilus Show**
  Saturday 21st October 2017 Community Church, 41-43 Eaton Road, West Pennant Hills.

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Dates: Sat 2nd Sept 10am to 4pm [Closed for judging between 11am & 12 noon this day]
Sun 3rd Sept 9am to 2pm

Location: Kempsey Dirt Bike Track, Alverton St., Greenhill, via Kempsey.

Details: Electronic copy of a brochure with locality map, show schedule and associated events is available by e-mailing John Zietsch at: **anosmidnorthcoast@hotmail.com**
OR contact Ted Walmsley on (02) 6562-7150 or John Zietsch on (02) 6554-9733.

Directory of ANOS Groups (and Associated Societies)

NEW SOUTH WALES

- **ANOS Central Coast**; PO Box 3010, Erina NSW 2250 - Neville Lee (02)4340 5157 2nd Wednesda each month, 8pm. Narara Community Centre, 2 Pandala Rd, Narara 2250
- **ANOS Far North Coast Inc.**: PO Box 949 Ballina NSW 2478 - Keith Skaines (02)6686 6303 3 Saturday of month (except Dec. & Jan.), 2pm various venues, contact the secretary.
- **ANOS Illawarra**: 2 Wilford St, Corrimal NSW 2518 - Bruce Porter (02)4284 8308 2nd Tuesday eac month, 7pm. Old Court House, Wollongong.
- **ANOS Macarthur and District**: 8A Boundary Rd., Parramatta NSW 2150 - Wally Southwell (02) 468 8589 3rd Thursday each month, 8pm. Birriwa Community Hall, Fitzpatrick Rd, Mt Annan.
- **ANOS Mid-North Coast**: 69 The Lakes Way, Forster NSW 2428 - John Zietsch (02)6554 9733 3 Sunday each month, 12 noon, followed by BBQ. Contact for location - Taree or Wauchope
- **ANOS Newcastle Inc.**: PO Box 4021, Rathmines NSW 2283 - Peter Denning (02)4975 3729 4 Thursday of month, 7.30pm. Elermore Vale Community Centre, Croudace St, Elermore Vale.
- **ANOS Sydney Inc.**: 9 Alicia St, Glenwood NSW 2768 - Andrew Locke (02)8824 6338 3rd Friday eac month, 8pm. Senior Citizens Hall, B.H. Community Centre, Conie Ave, Baulkham Hills.
- **ANOS Warringah Inc.**: PO Box 421, Forestville NSW 2087 - Bill Dobson (02)9981 2525 3rd Tuesda each month, 8pm. Community Hall, Starkey St, Forestville.

QUEENSLAND

- **ANOS Beenleigh Inc.**: PO Box 1130, Beenleigh QLD 4207 - David Cleal (07)3805 6865 1st Thursda each month, 7.30pm. Showground Hall, James St, Beenleigh
- **ANOS Kabi Inc.**: PO Box 424, Aspley QLD 4034 - David James (07) 3359 5752 2nd Tuesday c month except Jan., 7.30pm. Isabella Griffin Room, Strathpine Community Centre, 199 Gympie Roa Strathpine.
- **ANOS Mackay and District**: 24 Barton St, Mackay, QLD - Arthur Pinkney (07)4952 2186 2nd Thursda each month, Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville Inc.**: 92 Curie St, Wulguru QLD 4811 - John Nuss (07)4778 4311 1st Tuesda monthly (excl. Jan.) 8pm Townsville O.S. Hall, Joe Kirwan Pk, cnr Bamford Lane & Charles S Townsville
- **Native Orchid Society of Toowoomba Inc**. 106 Umbiram Rd, Wyreema QLD 4352 - Josie Wrig (07)4696 2150 1st Friday of month, 7.30pm Lutheran Church Hall, cnr West and Alderley St, Toowoomb

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia Inc.**: PO Box 565 Unley SA 5061 - Les Nesbitt (08) 826 1550 4th Tuesday each month, 8pm. St Matthew's Hall, 67 Bridge St, Kensington.

VICTORIA

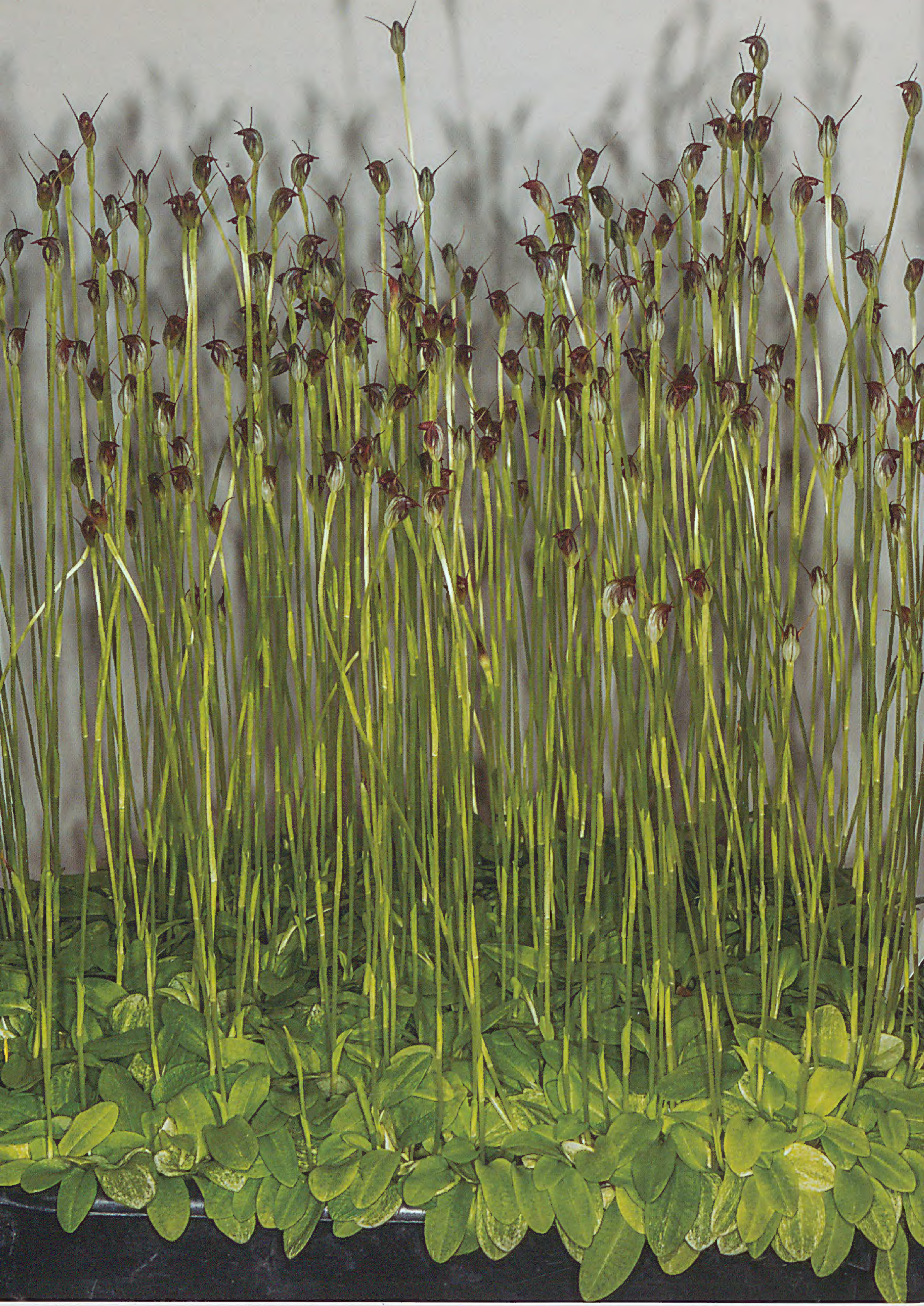
- **ANOS Geelong Inc.**: 609 South Street, Ballarat VIC 3350 - Anita Hinton (03)9743 6040 2 Wednesday each month, 7.30pm. Uniting Church Hall, Yarra St, Geelong.
- **ANOS Melbourne Suburbs Inc.**: PO Box 169, Bayswater VIC 3153 - Phil Ritchie (03)95255 9606 4 Wednesday of month (excl. Dec. & Jan.), 7.30pm. Montrose Primary School, Leith Rd, Montrose 376
- **ANOS Victoria Inc.**: PO Box 308, Boronia VIC 3155 - (03)9387 2771 1st Friday each month, 8pr Toorak Uniting Church Hall, , 603 Toorak Rd, Toorak.

WESTERN AUSTRALIA

- **ANOS Western Australia Inc.**: Mrs Lyn Morgan, 99 Bywater Way, Wilson WA 6107 - (08)9451 216 2nd Monday each month, 8pm. Wilson Community Hall, Braibrise Rd, Wilson.

NEW ZEALAND

- **ANOS New Zealand Native Orchid Group** 42 Titiro Moanna Rd, Korokoro, Lower Hutt 5012



Pterostylis pedunculata 'Kevin' ACC/ANOS 2016 (NSW) Photo Phillip Radford